



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS
सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



RRB TECHNICIAN GRADE III 2024

Technician Grade III | CEN RRB 02/2024

ENGLISH ANSWER KEY

Official Answer Key with Solutions

All 23 Shifts · 20-12-2024 to 30-12-2024

Questions	100
Marking	+1 correct / -1/3 wrong
Duration	90 minutes
Sections	General Science 40 · Maths 25 · Reasoning 25 · GA 10

Every paper here is the official RRB response sheet with the correct answer marked.

HOW TO USE THIS BOOK

- 1 Open the INDEX on the next page.
- 2 Click any row to jump straight to that date and shift.
- 3 Correct options are ticked in green, wrong ones crossed in red.
- 4 Use the bookmarks panel of your PDF reader to move between shifts.

Check your marks, normalized score and zone-wise rank free at
rank.qmaths.in

Blackbook

Score & Rank Calculator · rank.qmaths.in

Compiled 12 September 2026

INDEX · Click any row to open that paper

RRB Technician Grade III 2024 (English) · 23 shifts

DAY	DATE	SHIFT	TIME	PAGE
Day 1	20-12-2024	Shift 1	12:45 - 14:15	3
Day 1	20-12-2024	Shift 2	16:30 - 18:00	21
Day 2	23-12-2024	Shift 1	09:00 - 10:30	39
Day 2	23-12-2024	Shift 2	12:45 - 14:15	57
Day 2	23-12-2024	Shift 3	16:30 - 18:00	75
Day 3	24-12-2024	Shift 1	09:00 - 10:30	93
Day 3	24-12-2024	Shift 2	12:45 - 14:15	111
Day 3	24-12-2024	Shift 3	16:30 - 18:00	129
Day 4	26-12-2024	Shift 1	09:00 - 10:30	147
Day 4	26-12-2024	Shift 2	12:45 - 14:15	164
Day 4	26-12-2024	Shift 3	16:30 - 18:00	182
Day 5	27-12-2024	Shift 1	09:00 - 10:30	199
Day 5	27-12-2024	Shift 2	12:45 - 14:15	217
Day 5	27-12-2024	Shift 3	16:30 - 18:00	234
Day 6	28-12-2024	Shift 1	09:00 - 10:30	251
Day 6	28-12-2024	Shift 2	12:45 - 14:15	269
Day 6	28-12-2024	Shift 3	16:30 - 18:00	286
Day 7	29-12-2024	Shift 1	09:00 - 10:30	302
Day 7	29-12-2024	Shift 2	12:45 - 14:15	319
Day 7	29-12-2024	Shift 3	16:30 - 18:00	337
Day 8	30-12-2024	Shift 1	09:00 - 10:30	355
Day 8	30-12-2024	Shift 2	12:45 - 14:15	372
Day 8	30-12-2024	Shift 3	16:30 - 18:00	389



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS
सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	ARYA MAHILA PG COLLEGE
Test Date	20/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 1 2 8 2 4 1 7 6 1 7 3 2 9 7 5 1 7 8 6 8 2 4 3 9 4 6 6 2 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

Ans ☒ 1. 3

☒ 2. 1

☒ 3. 4

☒ 4. 2

Q.2 What is the displacement accomplished by an object if it moves 15 m to the right from point 'A' and then moves 15 m to the opposite direction to reach the same point 'A'?

Ans ☒ 1. 30 m

☒ 2. 7.5 m

☒ 3. 0 m

☒ 4. 15 m

Q.3 The value of $\frac{9}{10} \div \left(\frac{4}{5} + \frac{1}{10}\right)$ is:

Ans ☒ 1. 0

☒ 2. 1

☒ 3. $\frac{81}{100}$

☒ 4. $\frac{1}{10}$

Q.4 PLSO is related to VRYS in a certain way based on the English alphabetical order. In the same way, MIPL is related to SOVR. To which of the following options is IELH related, following the same logic?

- Ans**
- ✓ 1. OKRN
 - ✗ 2. OKNR
 - ✗ 3. KONR
 - ✗ 4. KORN

Q.5 A uniform magnetic field is represented by:

- Ans**
- ✗ 1. parallel but irregular straight lines
 - ✗ 2. concentric circular lines
 - ✗ 3. elliptical lines
 - ✓ 4. parallel and equidistant straight lines

Q.6 Which functions both as a passageway for intracellular transport and as a manufacturing surface?

- Ans**
- ✗ 1. Ribosome
 - ✓ 2. Endoplasmic reticulum
 - ✗ 3. Mitochondria
 - ✗ 4. Plastids

Q.7 What is the primary objective of the partnership between the British Council and Guidance Tamil Nadu?

- Ans**
- ✗ 1. To promote tourism in Tamil Nadu
 - ✗ 2. To foster international trade agreements
 - ✗ 3. To support traditional agriculture in Tamil Nadu
 - ✓ 4. To empower the creative economy and cultural industries of Tamil Nadu

Q.8 Which of the following is an example of a sol?

- Ans**
- ✗ 1. Face cream
 - ✓ 2. Milk of magnesia
 - ✗ 3. Rubber
 - ✗ 4. Foam

Q.9 Consider the magnetic field produced by a current carrying solenoid. Which of the following statements is INCORRECT?

- Ans**
- ✗ 1. The solenoid in a way acts similar to the bar magnet.
 - ✗ 2. The magnetic field near the centre of long solenoid is nearly constant.
 - ✗ 3. The strength of the magnetic field increases if we increase the number of turns.
 - ✓ 4. The magnitude of the magnetic field outside but close to the solenoid is extremely large.

Q.10 Which of the following is a prime number?

- Ans**
- ✗ 1. 221
 - ✓ 2. 373
 - ✗ 3. 161
 - ✗ 4. 437

Q.11 In order to pass in an examination, a student is required to get 780 marks out of the maximum aggregate marks. Sonal got 728 marks and was declared failed by 5%. What is the maximum aggregate marks that a student can get in the examination?

- Ans**
- ☐ 1. 1000
 - ☒ 2. 1040
 - ☐ 3. 1140
 - ☐ 4. 1100

Q.12 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only two people sit between A and M when counted from the right of A. Only three people sit between P and L when counted from the right of L. M sits to the immediate right of L. E sits to the immediate right of G. Who sits fourth to the right of B?

- Ans**
- ☒ 1. E
 - ☐ 2. P
 - ☐ 3. G
 - ☐ 4. M

Q.13 What is the function of growth hormones?

- Ans**
- ☐ 1. It stimulates development of female sex organs.
 - ☐ 2. It regulates blood sugar level.
 - ☐ 3. It regulates metabolism for body growth.
 - ☒ 4. It stimulates growth in all organs.

Q.14 Find the number of sides in a regular polygon if its each interior angle is 165° .

- Ans**
- ☐ 1. 18
 - ☒ 2. 24
 - ☐ 3. 20
 - ☐ 4. 25

Q.15 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JLO, KMP, LNQ, MOR, ?

- Ans**
- ☐ 1. PNS
 - ☒ 2. NPS
 - ☐ 3. PSN
 - ☐ 4. NSP

Q.16 Which of the following is correct about trophic levels in a food chain?

- Ans**
- ☐ 1. The heterotrophs fix up the solar energy and make it available for herbivores or other consumers.
 - ☐ 2. The Larger carnivores or the tertiary consumers form the third trophic level.
 - ☐ 3. The herbivores or the secondary consumers come at the second level.
 - ☒ 4. The autotrophs or the producers are at the first trophic level.

Q.17 The United Nations 2024 Multidimensional Poverty Index (MPI) highlights that India has the highest number of people in multidimensional poverty globally, with ____ million affected.

- Ans**
- ✓ 1. 234
 - ✗ 2. 245
 - ✗ 3. 225
 - ✗ 4. 214

Q.18 If lysosomes are also known as the 'suicide bags' of the cell, then which of the following is the powerhouse of the cell?

- Ans**
- ✗ 1. Vacuoles
 - ✓ 2. Mitochondria
 - ✗ 3. Endoplasmic reticulum
 - ✗ 4. Plastids

Q.19 According to Rutherford's model of an atom, where is most of the mass of the atom located?

- Ans**
- ✓ 1. In the nucleus
 - ✗ 2. In the electron cloud
 - ✗ 3. In the shells of electrons
 - ✗ 4. It is equally distributed throughout

Q.20 What price should a shopkeeper mark on an article, which costs him ₹153, to gain 20% after allowing a discount of 15%?

- Ans**
- ✗ 1. ₹224
 - ✗ 2. ₹184
 - ✗ 3. ₹162
 - ✓ 4. ₹216

Q.21 Two pipes X and Y can fill a cistern in 21 hours and 24 hours, respectively. The pipes are opened simultaneously, and it is found that due to a leakage in the bottom it takes 48 minutes more to fill the cistern. When the cistern is full, in how much time will the leak empty it if no pipe is open during that time?

- Ans**
- ✓ 1. 168 hours
 - ✗ 2. 144 hours
 - ✗ 3. 120 hours
 - ✗ 4. 130 hours

Q.22 Shahid starts from Point A and drives 20 km towards West. He then takes a left turn, drives 20 km, turns left and drives 15 km. He then takes a left turn and drives 12 km. He takes a final right turn, drives 5 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✗ 1. 8 km towards East
 - ✗ 2. 10 km towards South
 - ✗ 3. 5 km towards North
 - ✓ 4. 8 km towards North

Q.23 $\sec^2 A + (\operatorname{cosec}^2 A - 1) + (1 + \tan^2 A) - \cot^2 A = \underline{\hspace{2cm}}$.

- Ans**
- ✓ 1. $2\sec^2 A$
 - ✗ 2. 1
 - ✗ 3. 0
 - ✗ 4. $\cot^2 A$

Q.24 The flexibility in plants is due to which permanent tissue that allows bending of various parts of a plant like tendrils and stems of climbers without breaking?

- Ans**
- ☒ 1. Collenchyma
 - ☐ 2. Aerenchyma
 - ☐ 3. Chlorenchyma
 - ☐ 4. Parenchyma

Q.25 _____ won the 42nd Ranji Trophy title, by defeating Vidarbha, in the 2023-2024 season.

- Ans**
- ☐ 1. Karnataka
 - ☒ 2. Mumbai
 - ☐ 3. Gujarat
 - ☐ 4. Delhi

Q.26 Which of the following is the characteristic of a liquid?

- Ans**
- ☐ 1. It has fixed shape and volume.
 - ☐ 2. It is highly compressible.
 - ☒ 3. It has fixed volume but not fixed shape.
 - ☐ 4. It is hard.

Q.27 The splitting of the two cells during division can take place in any plane. Such patterns of fission have been observed in which protozoan?

- Ans**
- ☐ 1. Leishmania
 - ☐ 2. Hydra
 - ☒ 3. Amoeba
 - ☐ 4. Plasmodium

Q.28 Who is the author of 'A Game of Two Halves: The Story of the Golden Era of Indian Club Football'?

- Ans**
- ☒ 1. Rishav Ray
 - ☐ 2. Sunil Chetri
 - ☐ 3. Anand Patel
 - ☐ 4. Krishna Rao

Q.29 Subtracting 90% of X from X is equivalent to multiplying X by:

- Ans**
- ☐ 1. 0.9
 - ☐ 2. 0.8
 - ☒ 3. 0.1
 - ☐ 4. 0.5

Q.30 When we are standing in a bus facing towards the driver and the bus begins to move straight suddenly, we tend to fall:

- Ans**
- ☐ 1. forward
 - ☐ 2. right side
 - ☐ 3. left side
 - ☒ 4. backwards

Q.31 When plant cells lose water by osmosis, the contents shrink away from the cell wall; this process is known as _____.

- Ans**
- ☐ 1. Diffusion
 - ☐ 2. Active Transport
 - ☒ 3. Plasmolysis
 - ☐ 4. Passive Transport

Q.32 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. Only Z sits to the right of D. Only three people sit to the left of A. Only three people sit between D and L. Y sits at some place to the left of X but at some place to the right of B. How many people sit between B and X?

- Ans**
- ☐ 1. Two
 - ☒ 2. Three
 - ☐ 3. Four
 - ☐ 4. One

Q.33 In a certain code language, 'Pay The Tax' is written as 'Gi Si Di', 'File Tax Return' is written as 'Ri Zi Si' and 'Keep The Tax File' is written as 'Qi Si Gi Zi'. How is 'File' coded in the given language?

- Ans**
- ☐ 1. Si
 - ☐ 2. Gi
 - ☒ 3. Zi
 - ☐ 4. Qi

Q.34 In what duration will a sum of money double itself at 20% per annum simple interest?

- Ans**
- ☐ 1. 10 years
 - ☐ 2. 8 years
 - ☐ 3. 12 years
 - ☒ 4. 5 years

Q.35 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

433, 414, 376, 319, 243, ?

- Ans**
- ☐ 1. 124
 - ☐ 2. 162
 - ☐ 3. 136
 - ☒ 4. 148

Q.36 Where was the maiden flight-test of the Long Range Land Attack Cruise Missile (LRLACM) conducted by DRDO?

- Ans**
- ☐ 1. Missile Test Facility, Bengaluru
 - ☒ 2. Integrated Test Range (ITR), Chandipur, Odisha
 - ☐ 3. Indian Space Research Centre, Thiruvananthapuram
 - ☐ 4. Defence Research Facility, Hyderabad

Q.37 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. AGH
 - ☐ 2. MOQ
 - ☐ 3. QSU
 - ☐ 4. ZBD

Q.38 The pair of equations $3x - 5y = 7$ and $-6x + 10y = 7$ have:

- Ans**
- ☐ 1. a unique solution
 - ☐ 2. two solutions
 - ☒ 3. no solution
 - ☐ 4. infinitely many solutions

Q.39 Select the correct option related to the function regulated by ovaries.

- Ans**
- ☐ 1. Stimulates pituitary glands
 - ☐ 2. Stimulates growth in all organs
 - ☒ 3. Menstrual cycle
 - ☐ 4. Regulates metabolism

Q.40 In a certain code language, 'cant hurt me' is written as 'yk ja cm' and 'did he hurt' is coded as 'bt yo ja'. How is 'hurt' coded in the given language?

- Ans**
- ☐ 1. cr
 - ☐ 2. qe
 - ☒ 3. ja
 - ☐ 4. pr

Q.41 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 117 :: 15 : Y

- Ans**
- ☒ 1. X = 9, Y = 195
 - ☐ 2. X = 9, Y = 193
 - ☐ 3. X = 7, Y = 193
 - ☐ 4. X = 7, Y = 195

Q.42 When the level of growth hormone is low, which releases growth hormone releasing factor and stimulates the pituitary gland to release growth hormone?

- Ans**
- ☐ 1. Pancreas
 - ☐ 2. Thyroid gland
 - ☒ 3. Hypothalamus
 - ☐ 4. Adrenal gland

Q.43 Starting from rest, a car is moving with a uniform acceleration of 0.5 m/s^2 . The velocity of the car after 20 s is:

- Ans**
- ☐ 1. 5 m/s
 - ☐ 2. 0 m/s
 - ☒ 3. 10 m/s
 - ☐ 4. 15 m/s

Q.44 Which of the following is an example of suspension?

- Ans**
- ☒ 1. Chalk powder in water
 - ☐ 2. Solution of sugar in water
 - ☐ 3. Few drops of milk in water
 - ☐ 4. Oil in water

Q.45 A solid iron rod is placed on the surface of the water. What would happen if the upthrust of water on the iron rod were greater than the downward force acting on it?

- Ans**
- ☒ 1. The iron rod would float on water surface.
 - ☐ 2. The iron rod would sink faster.
 - ☐ 3. The iron rod would sink slowly.
 - ☐ 4. The iron rod would move downwards.

Q.46 If a train travelling at a speed of 90 km/h crosses a pole in 5 sec, then the length of train is:

- Ans**
- ☐ 1. 140 m
 - ☐ 2. 104 m
 - ☐ 3. 152 m
 - ☒ 4. 125 m

Q.47 Which of the following events is a consequence of atmospheric refraction?

- Ans**
- ☐ 1. Curved mirrors to form enlarged image of an object
 - ☐ 2. Image formation by plain mirrors
 - ☒ 3. Advance sunrise and delayed sunset
 - ☐ 4. Rainbow formation

Q.48 Which of the following is the correct order of movement of food in the digestive tract?

- Ans**
- ☐ 1. Mouth - Stomach - Oesophagus
 - ☒ 2. Mouth - Oesophagus - Stomach
 - ☐ 3. Oesophagus - Mouth - Stomach
 - ☐ 4. Oesophagus - Stomach - Mouth

Q.49 Rambabu is under uniform motion, and he has covered 25 m in 5 s. How much distance can he cover in 3 s?

- Ans**
- ☐ 1. 10 m
 - ☒ 2. 15 m
 - ☐ 3. 20 m
 - ☐ 4. 5 m

Q.50 If $40 : 35 :: 35 : k$, find the value of $k - 1$.

- Ans**
- ☒ 1. $\frac{237}{8}$
 - ☐ 2. $\frac{245}{8}$
 - ☐ 3. $\frac{49}{8}$
 - ☐ 4. $\frac{49}{16}$

Q.51 A rectangle with perimeter 50 cm has its sides in the ratio 1 : 4. What is the perimeter of a square whose area is the same as that of the rectangle ?

- Ans**
- ☐ 1. 50 cm
 - ☐ 2. 36 cm
 - ☐ 3. 45 cm
 - ☒ 4. 40 cm

Q.52 Doubly-charged helium ions are also known as which of the following?

- Ans**
- ☐ 1. Beta particles
 - ☐ 2. X-rays
 - ☒ 3. Alpha particles
 - ☐ 4. Gamma particles

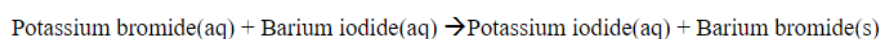
Q.53 Which of the following is the olfactory indicator to check the acidic or basic nature of the substance?

- Ans**
- ☐ 1. Red litmus
 - ☐ 2. Phenolphthalein
 - ☐ 3. Methyl orange
 - ☒ 4. Vanilla essence

Q.54 Justice Sanjiv Khanna sworn in as the ____ Chief Justice of India on 11 November 2024.

- Ans**
- ☐ 1. 50th
 - ☒ 2. 51st
 - ☐ 3. 52nd
 - ☐ 4. 49th

Q.55 The reaction given below is an example which of the following types of reaction?



- Ans**
- ☐ 1. Decomposition reaction
 - ☐ 2. Displacement reaction
 - ☒ 3. Double displacement reaction
 - ☐ 4. Combination reaction

Q.56 Which reproductive part(s) is/are essential for fertilisation?

- Ans**
- ☐ 1. Thalamus
 - ☐ 2. Petals
 - ☐ 3. Sepal
 - ☒ 4. Pollen grain and ovule

Q.57 Which of the following techniques is used to separate colloidal particles from the mixture?

- Ans**
- ☐ 1. Filtration
 - ☒ 2. Centrifugation
 - ☐ 3. Evaporation
 - ☐ 4. Distillation

Q.58 Simmi's mother made 8ltr 785 ml of soup for the party. If the soup was distributed equally among 35 people, how much soup was given to each person?

- Ans**
- ☐ 1. 250 ml
 - ☐ 2. 255 ml
 - ☐ 3. 254 ml
 - ☒ 4. 251 ml

Q.59 All of the following are examples of connective tissue, EXCEPT:

- Ans**
- ☐ 1. blood
 - ☐ 2. cartilage
 - ☒ 3. tracheid
 - ☐ 4. bone

Q.60 In electrolytic refining process, on passing the current impurities settle down, those impurities are known as _____.

- Ans**
- ☐ 1. cathode mud
 - ☒ 2. anode mud
 - ☐ 3. gangue
 - ☐ 4. electrolytic mud

Q.61 If a man bought 6 pencils for ₹5, and sold them at 5 pencils for ₹6, then the gain percentage is _____.

- Ans**
- ☐ 1. 41%
 - ☐ 2. 42%
 - ☐ 3. 43%
 - ☒ 4. 44%

Q.62 What does the subscript in a chemical formula represent?

- Ans**
- ☐ 1. The oxidation state of the element
 - ☐ 2. The charge of the ion
 - ☐ 3. The mass of the compound
 - ☒ 4. The number of atoms of each element in a molecule

Q.63 The average of all natural numbers between 12 and 39 which are divisible by 5 is _____.

- Ans**
- ☐ 1. 25.5
 - ☐ 2. 21
 - ☒ 3. 25
 - ☐ 4. 28

Q.64 In September 2024, which bank launched Aditi, a GenAI powered Virtual Relationship Manager that aims to enhance the digital customer service experience?

- Ans**
- ☐ 1. State Bank of India
 - ☒ 2. Bank of Baroda
 - ☐ 3. HDFC Bank
 - ☐ 4. Canara Bank

Q.65 The sum of ages of Amit and Amita is 15 years more than the sum of ages of Amita and Amrita. How many years younger is Amrita as compared to Amit?

- Ans**
- ☐ 1. 19
 - ☐ 2. 13
 - ☒ 3. 15
 - ☐ 4. 12

Q.66 In electrolytic refining procedure, the cathode is made up of:

- Ans**
- ☐ 1. alloy metal
 - ☒ 2. pure metal
 - ☐ 3. impure metal
 - ☐ 4. metal salt

Q.67 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. NK-MP
 - ☒ 2. JG-IM
 - ☐ 3. DA-CF
 - ☐ 4. GD-FI

Q.68 Evaluate the given expression.

$$6 + 6 \times 6 - 6$$

- Ans**
- ☒ 1. 36
 - ☐ 2. 42
 - ☐ 3. 0
 - ☐ 4. 66

Q.69 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

YEF, VFI, SGL, PHO, ?

- Ans**
- ✓ 1. MIR
 - ✗ 2. IMR
 - ✗ 3. NMQ
 - ✗ 4. NMR

Q.70 Which of the following statements of force is/are correct?

- A. Weight is a force that acts vertically downward on an object.
- B. Thrust is the force acting on an object perpendicular to the surface.

- Ans**
- ✗ 1. 'A' is correct and 'B' is incorrect.
 - ✗ 2. Both 'A' and 'B' are incorrect.
 - ✗ 3. 'A' is incorrect and 'B' is correct.
 - ✓ 4. Both 'A' and 'B' are correct.

Q.71 If a car travelling along a straight road increases its speed by unequal amounts in equal intervals of time, then the car is said to be moving with:

- Ans**
- ✗ 1. uniform speed
 - ✓ 2. non-uniform acceleration
 - ✗ 3. uniform acceleration
 - ✗ 4. uniform velocity

Q.72 If 'A' stands for '+', 'B' stands for '−', 'C' stands for '÷' and 'D' stands for '×', what will come in place of the question mark '?' in the following equation?

18 C 6 D 18 A 6 B 18 = ?

- Ans**
- ✗ 1. 67
 - ✗ 2. 62
 - ✓ 3. 42
 - ✗ 4. 7

Q.73 Which of the following is/are correct regarding the components of an ecosystem?

- A. Living organisms - Abiotic Component
- B. Soil - Biotic component
- C. Minerals - Abiotic component

- Ans**
- ✗ 1. Only B
 - ✓ 2. Only C
 - ✗ 3. Both A and C
 - ✗ 4. A, B and C

Q.74 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Even though Company X is the biggest exporter of wheat in the country, it is not among one of the biggest profit earning companies in the Country.

Reasons:

I. Trading in other materials other than wheat, like iron, is much more profitable

II. Company X has heavy miscellaneous expenditure

Ans ☒ 1. Neither I nor II is a possible reason.

☒ 2. Only I is a possible reason.

☒ 3. Both I and II are possible reasons.

☒ 4. Only II is a possible reason.

Q.75 Select the greatest number from the given numbers.

4^{50} , 2^{100} , 16^{25}

Ans ☒ 1. All are equal

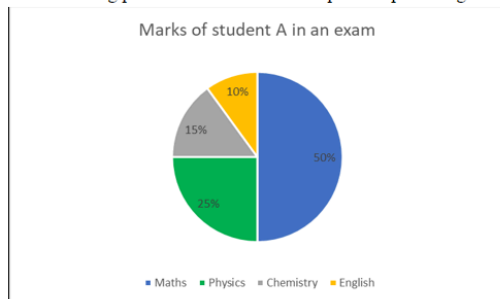
☒ 2. 16^{25}

☒ 3. 4^{50}

☒ 4. 2^{100}

Q.76 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of the percentage marks of Student A in an exam.



If the total marks scored by Student A are 260, then what are the total marks scored by the student in Physics and English in the exam?

Ans ☒ 1. 87

☒ 2. 95

☒ 3. 91

☒ 4. 85

Q.77 Select the correct pair from the following options.

Ans ☒ 1. Velocity varies with time - Uniform motion

☒ 2. Velocity does not change with time - Non-uniform motion

☒ 3. Change in velocity per unit time - Acceleration

☒ 4. Motion of a freely falling body - Non-uniform acceleration

Q.78 The average of the first 10 prime numbers is:

- Ans**
- ☐ 1. 15.5
 - ☒ 2. 12.9
 - ☐ 3. 10
 - ☐ 4. 12.5

Q.79 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All shirts are pants.

All pants are ties.

No ties are jeans.

Conclusions:

(I) No jeans are pants.

(II) All pants are shirts.

- Ans**
- ☐ 1.
 - ☐ 2. Neither conclusion (I) nor (II) follows.
 - ☒ 3. Only conclusion (I) follows.
 - ☐ 4. Only conclusion (II) follows.

Q.80 In a row of people all facing North, Shreya is 11th from the left end. Ravi is 12th from the left end. Ravi is exactly between Shreya and Rahul. If Rahul is 15th from the right end of the line, how many people are there in the row?

- Ans**
- ☐ 1. 29
 - ☐ 2. 45
 - ☐ 3. 28
 - ☒ 4. 27

Q.81 _____, conferred the prestigious Sangeet Natak Akademi Awards (Akademi Puraskar) for the years 2022 and 2023 to 94 eminent artists.

- Ans**
- ☐ 1. Home Minister of India, Shri. Amit Shah
 - ☐ 2. Defense Minister of India, Shri. Rajnath Singh
 - ☐ 3. Prime Minister of India, Shri. Narendra Modi
 - ☒ 4. President of India, Smt. Droupadi Murmu

Q.82 Which school in Kerala in 2024 made history by introducing India's first AI-powered teacher, 'Iris'?

- Ans**
- ☐ 1. Chinmaya Vidyalaya
 - ☒ 2. KTCT Higher Secondary School
 - ☐ 3. Sacred Heart School
 - ☐ 4. Loyola School

Q.83 In which district of Kerala did a major landslide occur in July 2024?

- Ans**
- ☐ 1. Thrissur
 - ☐ 2. Malappuram
 - ☐ 3. Idukki
 - ☒ 4. Wayanad

Q.84 A woman has invested ₹85,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 4 years. Find the amount that she will receive after 4 years.

- Ans**
- ☐ 1. ₹1,08,750
 - ☐ 2. ₹69,600
 - ☒ 3. ₹1,10,500
 - ☐ 4. ₹75,000

Q.85 If $10000x = (9982)^2 - (18)^2$, then the value of x is:

- Ans**
- ☐ 1. 9809
 - ☐ 2. 9886
 - ☒ 3. 9964
 - ☐ 4. 9976

Q.86 What is the angle between the two lateral faces of a triangular glass prism called?

- Ans**
- ☒ 1. Angle of prism
 - ☐ 2. Base angle
 - ☐ 3. Inclination angle
 - ☐ 4. Angle of deviation

Q.87 A sum of money is distributed among four people A, B, C and D in the ratio 4 : 7 : 9 : 3. If C gets ₹800 more than B, then find the amount that D gets.

- Ans**
- ☐ 1. ₹1,000
 - ☐ 2. ₹1,500
 - ☐ 3. ₹1,400
 - ☒ 4. ₹1,200

Q.88 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged?

$$8 + 7 \div 36 \times 9 - 12 = ?$$

- Ans**
- ☐ 1. 19
 - ☒ 2. 24
 - ☐ 3. 25
 - ☐ 4. 21

Q.89 Nayan can do a piece of work in 25 days. Tarun is 25% more efficient than Nayan. The number of days taken by Tarun to do the same piece of work is:

- Ans**
- ☐ 1. 25
 - ☒ 2. 20
 - ☐ 3. 16
 - ☐ 4. 15

Q.90 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some cushions are bells.

All cushions are machines.

Conclusions:

(I) All machines are cushions.

(II) Some bells are machines.

Ans ✗ 1. Neither conclusion (I) nor (II) follows

✓ 2. Only conclusion (II) follows

✗ 3. Only conclusion (I) follows

✗ 4. Both conclusions (I) and (II) follow

Q.91 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 88 :: 12 : Y

Ans ✗ 1. X = 8, Y = 152

✗ 2. X = 14, Y = 132

✓ 3. X = 8, Y = 132

✗ 4. X = 14, Y = 176

Q.92 With which of the following does the hydrophilic end of soaps react?

Ans ✓ 1. Water

✗ 2. Hydrocarbon

✗ 3. Oil

✗ 4. Both water and oil

Q.93 Which of the following synthetic chemicals was responsible for the sharp drop in the amount of ozone in the atmosphere in the 1980s?

Ans ✗ 1. Iodobromocarbons

✗ 2. Chloriodocarbons

✓ 3. Chlorofluorocarbons

✗ 4. Iodofluorocarbons

Q.94 TPVS is related to LHNK in a certain way based on the English alphabetical order. In the same way, WSYV is related to OKQN. To which of the following options is RNTQ related, following the same logic?

Ans ✗ 1. FJIL

✓ 2. JFLI

✗ 3. FJLI

✗ 4. JFIL

Q.95 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 2 7 5 3 1 5 8 7 7 4 0 6 3 1 2 1 9 2 2 6 5 0 8 6 2 7 5 3 9 3 (Right)

What is the sum of the 1st digit from the left and the 15th digit from the right?

- Ans**
- ☒ 1. 6
 - ☒ 2. 3
 - ☐ 3. 0
 - ☐ 4. 5

Q.96 Find the area of a regular hexagon (in cm^2) with sides of length 6 cm.

- Ans**
- ☒ 1. $54\sqrt{3}$
 - ☐ 2. 18
 - ☐ 3. 36
 - ☐ 4. $5\sqrt{2}$

Q.97 Which of the options provides the correct explanation for the following statement?

Sweating cools down your body on a hot day.

- Ans**
- ☐ 1. Sweating increases the body's temperature.
 - ☐ 2. The given statement is wrong.
 - ☐ 3. Sweating increases blood circulation and cools the body.
 - ☒ 4.

Sweating causes rapid evaporation, which absorbs heat from the body surface and cools the body.

Q.98 What is the speed v of an athlete, if the athlete takes t seconds to go once around a circular path of radius r ?

- Ans**
- ☐ 1. $v = 0$
 - ☐ 2. $v = 2 \text{ m/s}$
 - ☒ 3. $v = 2\pi r/t$
 - ☐ 4. $v = \pi r^2 /t$

Q.99 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 7 0 5 5 0 9 5 5 9 8 2 9 1 2 8 6 6 9 8 6 9 4 7 2 1 0 1 2 5 (Right)

What is the sum of the 10th digit from the left and the 4th digit from the right?

- Ans**
- ☒ 1. 
 - ☐ 2. 8
 - ☐ 3. 11
 - ☐ 4. 10

Q.100 In a certain code language,

$A + B$ means 'A is the brother of B',

$A - B$ means 'A is the wife of B',

$A \times B$ means 'A is the father of B',

and $A \div B$ means 'A is the sister of B'.

How is P related to T if ' $P \times Q \div R - S \times T$ '?

- Ans
- ☐ 1. Father's brother
 - ☐ 2. Father's father
 - ☒ 3. Mother's father
 - ☐ 4. Mother's brother

2024/12/22-10:30:53



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	ION Digital Zone iDZ Madhyamgram
Test Date	20/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 If 'J' stands for '×', 'K' stands for '−', 'L' stands for '÷' and 'M' stands for '+', what will come in place of the question mark '?' in the following equation?

$$5 J 12 K 56 M 21 L 7 = ?$$

Ans ✓ 1. 7

✗ 2. −3

✗ 3. 17

✗ 4. −13

Q.2 In which of the following organisms is fragmentation common?

Ans ✓ 1. Only a few multicellular organisms

✗ 2. Only in few unicellular organisms

✗ 3. In all unicellular organisms

✗ 4. In all multicellular organisms

Q.3 নিচের কোন নন-বায়োডিগ্রেডেবল পদার্থ নিজেই হতে পারে এবং দীর্ঘ সময় ধরে পরিবেশে টিকে থাকতে পারে বা বাস্তুতন্ত্রের বিভিন্ন সদস্যদের ক্ষতি করতে পারে?

Ans ✗ 1. কাগজের তৈরি উপাদান

✗ 2. মাটির তৈরি উপাদান

✓ 3. প্লাস্টিকের তৈরি উপাদান

✗ 4. উদ্ভিদ পাতা দ্বারা তৈরি উপাদান

Q.4 The total amount of electric charge that flows through a circuit is 1200 C in 2 min. Then the amount of electric current that is drawn by the same electric circuit is:

Ans ✓ 1. 10 A

✗ 2. 100 A

✗ 3. 600 A

✗ 4. 60 A

Q.5 Which of the following will be the average velocity of the particle with initial velocity u and final velocity v in the given time interval?

- Ans**
- ☐ 1. $u + v$
 - ☐ 2. $\frac{u - v}{2}$
 - ☐ 3. 0
 - ☒ 4. $\frac{u + v}{2}$

Q.6 If the radius of sphere is decreased by 10 percent, then the volume of sphere will be decreased by what percentage?

- Ans**
- ☐ 1. 30.6%
 - ☐ 2. 25.6%
 - ☒ 3. 27.1%
 - ☐ 4. 32.5%

Q.7 Which of the following schemes was introduced by the Ministry of Culture, Government of India, to provide a platform for the artistes and artisans of the Northeast region to showcase their rich cultural heritage?

- Ans**
- ☐ 1. The Quadra - Festival of the Northeast
 - ☒ 2. The Octave - Festival of the Northeast
 - ☐ 3. The Penta - Festival of the Northeast
 - ☐ 4. The Trident - Festival of the Northeast

Q.8 The main thinking part of the brain that receives sensory impulses from various receptors is the:

- Ans**
- ☐ 1. mid-brain
 - ☐ 2. hind-brain
 - ☐ 3. spinal cord
 - ☒ 4. fore-brain

Q.9 With an initial velocity of 10 m/s, an object is thrown vertically upwards. The maximum height attained by the object is _____. (Assume $g = 10\text{m/s}^2$)

- Ans**
- ☐ 1. 100 m
 - ☒ 2. 5 m
 - ☐ 3. 20 m
 - ☐ 4. 1 m

Q.10 If 75% of x is 15 less than 15% of 1500, then the value of x is:

- Ans**
- ☐ 1. 300
 - ☐ 2. 150
 - ☒ 3. 280
 - ☐ 4. 120

Q.11 What will come in the place of '?' in the following equation, if '+' and ' $\times$ ' are interchanged?

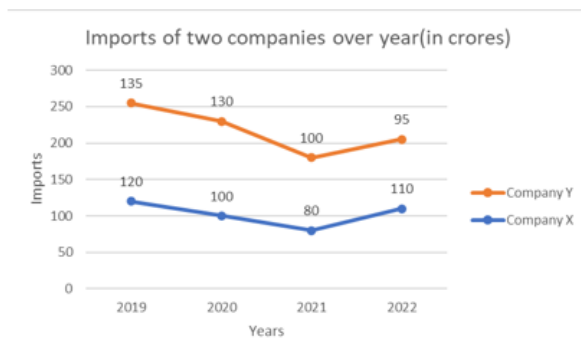
$$54 \times 9 \div 8 + 22 - 33 = ?$$

- Ans**
- ☐ 1. 42
 - ☐ 2. 39
 - ☒ 3. 37
 - ☐ 4. 41

Q.12 Which of the following metals reacts only with steam NOT with cold or hot water?

- Ans ☒ 1. Aluminium
☐ 2. Sodium
☐ 3. Magnesium
☐ 4. Potassium

Q.13 Study the following chart and answer the question that follows.



What is the difference in the imports by company X in the years 2019 and 2021?

- Ans ☒ 1. 40 crore
☐ 2. 20 crore
☐ 3. 15 crore
☐ 4. 10 crore

Q.14 How many key priorities are outlined in the Union Budget 2024-25 to achieve the objective of 'Viksit Bharat'?

- Ans ☐ 1. Eight
☒ 2. Nine
☐ 3. Seven
☐ 4. Ten

Q.15 If blood :: connective tissue, then bones :: _____.

- Ans ☒ 1. connective tissue
☐ 2. nervous tissue
☐ 3. epithelial tissue
☐ 4. muscular tissue

Q.16 Select the correct option related to the function of villi in the small intestine.

- Ans ☒ 1. Increases absorptive surface area
☐ 2. Helps in excretion
☐ 3. Secretion of minerals
☐ 4. Protection from acid

Q.17 নিম্নের মধ্যে কোনটি সুক্ষম বৃত্তীয় গতিতে চলমান বস্তুর উদাহরণ?

- Ans
- ☐ 1. একজন ব্যক্তি ফুটপাতে হাঁটছেন
 - ☐ 2. একটি পাখি আকাশে উড়ছে
 - ☒ 3. একটি উপগ্রহ একটি বৃত্তাকার কক্ষপথে পৃথিবীর চারপাশে প্রদক্ষিণ করছে
 - ☐ 4. একটি গাড়ি হাইওয়েতে সোজা চলছে

Q.18 In a certain code language, 'gentle breeze rustles' is coded as 'jb eg lz', and 'breeze rustles softly' is coded as 'lz cw eg'. What is the code for 'softly' in the given code language?

- Ans
- ☐ 1. eg
 - ☒ 2. cw
 - ☐ 3. jb
 - ☐ 4. lz

Q.19 Which of the following reactions is NOT an example of oxidation?

- Ans
- ☐ 1. $2\text{Cu} + \text{O}_2 \rightarrow \text{CuO}$
 - ☒ 2. $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$
 - ☐ 3. $\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$
 - ☐ 4. $\text{C} + \text{O}_2 \rightarrow \text{CO}_2$

Q.20 Which of the following substances is in solid form in the given reaction?

Sodium sulphate + barium chloride $\rightarrow$ sodium chloride + barium sulphate

- Ans
- ☒ 1. Barium sulphate
 - ☐ 2. Sodium sulphate
 - ☐ 3. Sodium chloride
 - ☐ 4. Barium chloride

Q.21 Who developed the planetary model of the atom with electrons orbiting the nucleus in discrete energy levels?

- Ans
- ☐ 1. Ernest Rutherford
 - ☐ 2. J.J. Thomson (Joseph John Thomson)
 - ☐ 3. Dmitri Mendeleev
 - ☒ 4. Niels Bohr

Q.22 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans
- ☐ 1. EI-MH
 - ☒ 2. PT-XR
 - ☐ 3. GK-OJ
 - ☐ 4. NR-VQ

Q.23 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. RY – AS
 - ☐ 2. NU – WO
 - ☐ 3. OV – XP
 - ☒ 4. DI – PW

Q.24 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All museums are parks.

No park is a theatre.

Conclusions:

(I) No museum is a theatre.

(II) At least some parks are museums.

- Ans**
- ☐ 1. Neither conclusion I nor II follows
 - ☐ 2. Only conclusion II follows
 - ☐ 3. Only conclusion I follows
 - ☒ 4. Both conclusions I and II follow

Q.25 The Sir Creek dispute is a long-standing border dispute between India and which neighbouring country?

- Ans**
- ☐ 1. Bangladesh
 - ☐ 2. China
 - ☐ 3. Nepal
 - ☒ 4. Pakistan

Q.26 The ratio between the radius of the base and the height of a cylinder is 3 : 4. If its volume is 38808 cm^3 then, using $\pi = \frac{22}{7}$, find the diameter of the cylinder.

- Ans**
- ☒ 1. 42 cm
 - ☐ 2. 14 cm
 - ☐ 3. 21 cm
 - ☐ 4. 28 cm

Q.27 Which of the following statements is/are NOT true about the principal focus of a spherical mirror?

- i) It always lies on the principal axis.
- ii) An incident ray passing through the focus after reflection becomes parallel to the principal axis.
- iii) Principal focus is a point where all the incident rays after reflection from the mirror meet.

- Ans**
- ☐ 1. Only (i)
 - ☒ 2. Only (iii)
 - ☐ 3. Only (ii) and (iii)
 - ☐ 4. Only (i) and (ii)

Q.28 All information from our environment is detected by the specialised tips of some nerve cells and these receptors are usually located in our sense organs such as:

- Ans**
- ☐ 1. the nose
 - ☐ 2. the inner ear
 - ☒ 3. the inner ear, the nose and the tongue
 - ☐ 4. the tongue

Q.29 Who became the first Indian woman to win two gold medals at the 2024 Paralympic Games in Paris?

- Ans**
- ☐ 1. Pramod Bhagat
 - ☒ 2. Avani Lekhara
 - ☐ 3. Bhavinaben Patel
 - ☐ 4. Deepa Malik

Q.30 In $\triangle ABC$ if $\angle A = 50^\circ$ and $\angle B = 70^\circ$, find the measure of exterior angle A.

- Ans**
- ☐ 1. 60°
 - ☒ 2. 130°
 - ☐ 3. 30°
 - ☐ 4. 140°

Q.31 What will be the effect of surface area on the evaporation process?

- Ans**
- ☐ 1. No effect of surface area on evaporation process.
 - ☐ 2. Evaporation decreases with increase in surface area.
 - ☒ 3. Evaporation increases with increase in surface area.
 - ☐ 4. Evaporation increases with decrease in surface area.

Q.32 Which organism uses regenerative cells for reproduction in the process of budding?

- Ans**
- ☒ 1. Hydra
 - ☐ 2. Leishmania
 - ☐ 3. Amoeba
 - ☐ 4. Yeast

Q.33 A bought an item for ₹384 and sold it for ₹480. B bought another item for ₹1,254 and sold it for ₹1,672. What is the ratio of the gain percentage of A to the gain percentage of B?

- Ans**
- ☐ 1. $\frac{15}{4}$
 - ☒ 2. $\frac{3}{4}$
 - ☐ 3. $\frac{15}{2}$
 - ☐ 4. $\frac{3}{2}$

Q.34 The sum of two rational numbers is -4 . If one of them is $-\frac{13}{25}$, then the other is:

- Ans**
- ☐ 1. $-\frac{67}{25}$
 - ☐ 2. $-\frac{37}{25}$
 - ☒ 3. $-\frac{87}{25}$
 - ☐ 4. $-\frac{47}{25}$

Q.35 The average of eight numbers is 14. The average of six of these numbers is 16. The average of the remaining two numbers is:

- Ans**
- ☐ 1. 4
 - ☐ 2. 12
 - ☐ 3. 16
 - ☒ 4. 8

Q.36 In August 2024, Biochemist Govindarajan Padmanabhan was awarded which of the following awards?

- Ans**
- ☒ 1. Vigyan Ratna Puraskar
 - ☐ 2. Shanti Swarup Bhatnagar award
 - ☐ 3. Vigyan Shri
 - ☐ 4. Vigyan Yuva-Shanti Swarup Bhatnagar

Q.37 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 84 :: 11 : Y

- Ans**
- ☐ 1. X = 6, Y = 153
 - ☐ 2. X = 6, Y = 152
 - ☒ 3. X = 6, Y = 154
 - ☐ 4. X = 7, Y = 154

Q.38 The age of the father is three times the age of the son. If the age of the son is 15 years, then the sum of the age of father and son is:

- Ans**
- ☐ 1. 45 years
 - ☐ 2. 50 years
 - ☒ 3. 60 years
 - ☐ 4. 40 years

Q.39 In October 2024, Partha Sengupta was appointed as the MD and CEO of ____.

- Ans**
- ☐ 1. ICICI Bank
 - ☐ 2. Canara Bank
 - ☐ 3. State Bank of India
 - ☒ 4. Bandhan Bank

Q.40 নিচের কোনটি মূল থেকে পাতা পর্যন্ত জল ও খনিজ পদার্থ শোষণ ও উর্ধ্বমুখে সঞ্চালিত হতে সাহায্য করে?

- Ans**
- ☐ 1. সালোকসংশ্লেষ
 - ☐ 2. শ্বসন
 - ☒ 3. বাষ্পমোচন
 - ☐ 4. স্থানান্তর

Q.41 John, Kate, Lisa, Mary, Neil and Omar are sitting around a circular table facing the centre. John sits second to left of Kate. Lisa sits third to right of Kate. Mary sits to the immediate left of Lisa. Neil sits to the immediate right of Kate.

How many people sit between Omar and Mary when counted from the right of Omar ?

- Ans**
- ☐ 1. One
 - ☐ 2. Zero
 - ☒ 3. Two
 - ☐ 4. Three

Q.42 In which of the following months was Charaideo Maidam in Assam included in the UNESCO World Heritage Site list under the cultural category?

- Ans**
- ☒ 1. July 2024
 - ☐ 2. October 2024
 - ☐ 3. August 2024
 - ☐ 4. September 2024

Q.43 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only three boxes are kept below L. Only two boxes are kept between L and Z. Only A is kept immediately above B. X is kept at some place below Y and at some place above C.

Which box is kept at second position from the bottom?

- Ans**
- ☒ 1. C
 - ☐ 2. X
 - ☐ 3. Y
 - ☐ 4. A

Q.44 The value of $(0.1 \times 0.001 \times 0.0001 \times 10^6)$ is:

- Ans**
- ☐ 1. $\frac{1}{10}$
 - ☐ 2. 1
 - ☐ 3. 100
 - ☒ 4. $\frac{1}{100}$

Q.45 NJQO is related to HDKI in a certain way based on the English alphabetical order. In the same way, SOVT is related to MIPN. To which of the following options is PLSQ related, following the same logic?

- Ans**
- ☐ 1. JFKM
 - ☐ 2. FJKM
 - ☐ 3. FJMK
 - ☒ 4. JFMK

Q.46 The following observations are arranged in ascending order.

29, 32, 38, 50, x , $x + 2$, 72, 78, 84, 95

If the median is 63, then the value of x is:

Ans ☒ 1. 50

☒ 2. 63

☒ 3. 31

☒ 4. 62

Q.47 What is the power of this combination of lens placed together when the power of the converging lens is 4.50 D and diverging lens is 3.00 D?

Ans ☒ 1. -13.5D

☒ 2. +1.5D

☒ 3. -7.5D

☒ 4. -1.5D

Q.48 Which of the following in eukaryotes is separated from the cytoplasm by a double-layered membrane and it directs the life processes of the cell?

Ans ☒ 1. Nucleus

☒ 2. Endoplasmic reticulum

☒ 3. Ribosome

☒ 4. Plastids

Q.49 The smallest particle of an element that retains its properties is called a/an:

Ans ☒ 1. proton

☒ 2. compound

☒ 3. atom

☒ 4. electron

Q.50 What is the chemical composition of washing soda?

Ans ☒ 1. $\text{Al}_2(\text{CO}_3)_3 \cdot 10\text{H}_2\text{O}$

☒ 2. $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$

☒ 3. $\text{Al}_2(\text{SO}_4)_3 \cdot 10\text{H}_2\text{O}$

☒ 4. $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

Q.51 In a circuit, a 10 volt battery and three resistors $R_1 = 2 \Omega$, $R_2 = 3 \Omega$, and $R_3 = 6 \Omega$ are connected in parallel to each other. Which of the following is the correct value of effective resistance R_e and current I flowing through the circuit?

Ans ☒ 1. $R_e = 1 \Omega, I = 1 \text{ A}$

☒ 2. $R_e = 2 \Omega, I = 10 \text{ A}$

☒ 3. $R_e = 2 \Omega, I = 1 \text{ A}$

☒ 4. $R_e = 1 \Omega, I = 10 \text{ A}$

Q.52 Which of the following best describes the relationship between distance, time and speed when a body is NOT accelerating?

Ans

☐ 1. $\text{distance} = \frac{\text{time}}{\text{speed}}$

☒ 2. $\text{time} = \frac{\text{distance}}{\text{speed}}$

☐ 3. $\text{distance} = \frac{\text{speed}}{\text{time}}$

☐ 4. $\text{speed} = \frac{\text{time}}{\text{distance}}$

Q.53 In which of the following countries did India win its first double team gold at the Chess Olympiad in September 2024?

Ans

☐ 1. Indonesia

☐ 2. China

☐ 3. Uzbekistan

☒ 4. Hungary

Q.54 The fourth proportional to 15, 10 and 12 is:

Ans

☐ 1. 12

☐ 2. 10

☐ 3. 6

☒ 4. 8

Q.55 In order to pass in an examination, a student is required to get 975 marks out of the maximum aggregate marks. Priya got 870 marks and was declared failed by 7%. What is the maximum aggregate marks that a student can get in the examination?

Ans

☐ 1. 1200

☒ 2. 1500

☐ 3. 1400

☐ 4. 1000

Q.56 A man has invested ₹65,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 6 years. Find the amount that he will receive after 6 years.

Ans

☐ 1. ₹28,750

☒ 2. ₹94,250

☐ 3. ₹29,250

☐ 4. ₹95,750

Q.57 নিম্নলিখিত সংখ্যা-জোড়ায়, প্রথম সংখ্যার সাথে কিছু নির্দিষ্ট গাণিতিক প্রক্রিয়া প্রয়োগ করে দ্বিতীয় সংখ্যাটি পাওয়া যায়। কোন সংখ্যাগুলি X এবং Y কে প্রতিস্থাপন করতে পারবে যাতে :: চিহ্নের বাম দিকের দুটি সংখ্যা দ্বারা অনুসরণ করা বিন্যাসটি, :: চিহ্নের ডান দিকে থাকা বিন্যাসের অনুরূপ হবে?

(দ্রষ্টব্যঃ সংখ্যাগুলিকে এদের উপাদান অঙ্কে বিভাজিত না করে, সমগ্র কার্যক্রমটি অখণ্ড সংখ্যার উপরেই সম্পাদন করতে হবে। যেমন, 13 এর ক্ষেত্রে, 13 এর উপরেই যাবতীয় কার্যক্রম সম্পাদন করতে হবে। অর্থাৎ, 13 এর সঙ্গেই যোগ/ বিয়োগ/ গুণ ইত্যাদি করতে হবে কিন্তু 13 কে তার উপাদান অঙ্ক 1 এবং 3 এ বিভাজিত করে তারপর 1 এবং 3 এর উপর কোনওপ্রকার গাণিতিক কার্যক্রম সম্পাদন করা যাবে না।)

X : 27 :: 15 : Y

Ans ☒ 1. X = 17, Y = 35

☒ 2. X = 11, Y = 37

☒ 3. X = 11, Y = 35

☒ 4. X = 17, Y = 38

Q.58 What is the physical state of non-metal element bromine?

Ans ☒ 1. Liquid state

☒ 2. Plasma state

☒ 3. Gaseous state

☒ 4. Solid state

Q.59 Two pipes, A and B, can fill a tank of 1000 litres in 5 hours and 6 hours, respectively. If they are opened together, how many hours will they take to fill an empty tank of 1800 litres?

Ans ☒ 1. $\frac{25}{11}$

☒ 2. $\frac{54}{11}$

☒ 3. $\frac{45}{11}$

☒ 4. $\frac{52}{11}$

Q.60 The atomic mass of an element is usually expressed in which of the following units?

Ans ☒ 1. Atomic mass units (amu)

☒ 2. Kilograms

☒ 3. Grams per mole (g/mol)

☒ 4. Pounds

Q.61 Two banks, A and B, offered loans at 5.5% and 6.5% per annum, respectively. Ramesh borrowed an amount of ₹3,00,000 from each bank. Find the positive difference between the amounts of simple interest paid to the two banks by Ramesh after 2 years.

Ans ☒ 1. ₹ 6,000

☒ 2. ₹ 8,000

☒ 3. ₹ 2,000

☒ 4. ₹ 4,000

Q.62 According to the reactivity series of metals, which metal pair is found in native state?

- Ans**
- ✓ 1. Gold and platinum
 - ✗ 2. Sodium and potassium
 - ✗ 3. Calcium and aluminium
 - ✗ 4. Calcium and magnesium

Q.63 নিচে একটি বিবৃতিকে অনুসরণ করে I এবং II সংখ্যাযুক্ত দুটি সম্ভাব্য কারণ দেওয়া হয়েছে। বিবৃতিটি মনোযোগ সহকারে পড়ুন এবং দুটির মধ্যে কোনটি/কোনগুলি বিবৃতিতে প্রদত্ত ঘটনা/পর্যবেক্ষণ/তথ্যের সম্ভাব্য কারণ হবে তা নির্ধারণ করুন।

বিবৃতি - যদিও স্কুল X-এর শিক্ষার্থীরা গত তিন বছর ধরে বোর্ড পরীক্ষায় সেরা তিনের মধ্যে স্থান করে নিয়েছে, স্কুলটি কখনও সেরা স্কুলের পুরস্কার পায়নি।

কারণ;

I. স্কুল X এর টিউশন ফি অনেক বেশি।

II. সেরা স্কুল পুরস্কার শিখার মানের পাশাপাশি অন্যান্য ক্রিয়াকলাপগুলিকেও বিবেচনা করে।

- Ans**
- ✗ 1. I এবং II উভয়ই একটি সম্ভাব্য কারণ।
 - ✗ 2. শুধুমাত্র I একটি সম্ভাব্য কারণ।
 - ✗ 3. I বা II কোনোটিই সম্ভাব্য কারণ নয়।
 - ✓ 4. শুধুমাত্র II একটি সম্ভাব্য কারণ।

Q.64 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 3 0 3 5 7 7 9 4 4 8 3 5 0 2 0 9 5 1 9 2 8 5 4 6 3 2 8 1 5 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?

- Ans**
- ✗ 1. 3
 - ✗ 2. 0
 - ✗ 3. 4
 - ✓ 4. 2

Q.65 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DGI, LOR, TWZ, BEH, ?

- Ans**
- ✓ 1. JMP
 - ✗ 2. KMO
 - ✗ 3. KNQ
 - ✗ 4. JLN

Q.66 Consider a situation where a person is sitting in a car and is driving at a constant velocity in a straight line. If the car turns sharply to the left, the person will be pushed in which of the following directions?

- Ans**
- ✓ 1. Right
 - ✗ 2. Backward
 - ✗ 3. Left
 - ✗ 4. Forward

Q.67 Which of the following metals is found in a free state in the earth's crust?

- Ans**
- ✗ 1. Zinc
 - ✗ 2. Sodium
 - ✗ 3. Aluminium
 - ✓ 4. Gold

Q.68 প্রকাশ বিন্দু A থেকে শুরু করে পূর্ব দিকে 30 km গাড়ি চালান। তারপরে তিনি ডান দিকে বাঁক নেন, 18 km গাড়ি চালান। তিনি আবার ডানদিকে বাঁক নেন এবং 17 km গাড়ি চালান। তারপর তিনি ডানদিকে বাঁক নেন এবং 9 km গাড়ি চালান। তিনি শেষবার বামদিকে বাঁক নিয়ে 13 km গাড়ি চালান এবং বিন্দু P-তে থানেন। আবার বিন্দু A-তে পৌঁছানোর জন্য কত দূর (সর্বনিম্ন দূরত্ব) এবং কোন দিকে গাড়ি চালাতে হবে?

(যদি নির্দিষ্ট করা না হয়, তাহলে সমস্ত বাঁক 90 ডিগ্রি বাঁক হবে।)

- Ans**
- ☒ 1. উত্তর দিকে 10 km
 - ☒ 2. পশ্চিম দিকে 9 km
 - ☒ 3. উত্তর দিকে 9 km
 - ☒ 4. পূর্ব দিকে 10 km

Q.69 Which of the following grows rapidly and ripens to form a fruit?

- Ans**
- ☒ 1. Ovary
 - ☒ 2. Stigma
 - ☒ 3. Pollen tube
 - ☒ 4. Anther

Q.70 If the volume of a cuboid is $3x^2 - 27$, then its possible dimensions are :

- Ans**
- ☒ 1. 3, 3, 3
 - ☒ 2. $3, x^2, 27x$
 - ☒ 3. $3, x^2, -27x$
 - ☒ 4. $3, x - 3, x + 3$

Q.71 According to the sign convention, the focal length of a convex lens is _____ and that of a concave lens is _____.

- Ans**
- ☒ 1. negative; positive
 - ☒ 2. positive; positive
 - ☒ 3. positive; negative
 - ☒ 4. negative; negative

Q.72 Who was the first to use a glass prism to obtain a spectrum of sunlight?

- Ans**
- ☒ 1. Edison
 - ☒ 2. Isaac Newton
 - ☒ 3. Einstein
 - ☒ 4. Fermi

Q.73 গুপ্তবীজী উদ্ভিদের জননাস্ত্রগুলি ফুলের মধ্যে অবস্থিত, যেখানে স্ত্রীজননাস্ত্রটি তিনটি অংশ, গর্ভমুন্ড, গর্ভদন্ড এবং গর্ভাশয় দ্বারা গঠিত এবং এটি কী নামে পরিচিত?

- Ans**
- ☒ 1. বৃত্যংশ
 - ☒ 2. দলাংশ
 - ☒ 3. গর্ভকেশর
 - ☒ 4. পুংকেশর

Q.74 Express $0.\overline{512}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans
- ☒ 1. $\frac{52}{999}$
 - ☒ 2. $\frac{502}{999}$
 - ☒ 3. $\frac{512}{99}$
 - ☒ 4. $\frac{512}{999}$

Q.75 In a certain code language,

$A + B$ means 'A is the sister of B',

$A - B$ means 'A is the husband of B',

$A \times B$ means 'A is the mother of B',

and $A \div B$ means 'A is the brother of B'.

How is P related to T if ' $P \times Q \div R - S \times T$ '?

- Ans
- ☒ 1. Father's sister
 - ☒ 2. Mother's sister
 - ☒ 3. Mother's mother
 - ☒ 4. Father's mother

Q.76 A line segment is of length 5 cm 7 mm. Another line segment of length 9 cm 6 mm is joined to it in the same direction. The length of the combined line segment is:

- Ans
- ☒ 1. 15 cm 3 mm
 - ☒ 2. 14 cm 3 mm
 - ☒ 3. 15 cm 7 mm
 - ☒ 4. 14 cm 6 mm

Q.77 Which of the following contracts and relaxes to cause movement and contains special proteins?

- Ans
- ☒ 1. Cartilage
 - ☒ 2. Muscles
 - ☒ 3. Bone
 - ☒ 4. Blood

Q.78 নিম্নলিখিতগুলির মধ্যে কোনটি বৃককে মূত্রথলির সঙ্গে সংযুক্ত করে?

- Ans
- ☒ 1. শিল্প
 - ☒ 2. শ্রোণি
 - ☒ 3. মূত্রনালী
 - ☒ 4. গবিনী

Q.79 How many isotopes of hydrogen element exist in nature?

- Ans**
- ☒ 1. 3
 - ☐ 2. 2
 - ☐ 3. 1
 - ☐ 4. 5

Q.80 Kulhads are disposable cups made of clay. A little thought shows that making these kulhads on a large scale would result in:

- Ans**
- ☐ 1. large remains collected in environment
 - ☐ 2. choking the sewage line
 - ☐ 3. Unhygienic of its use
 - ☒ 4. losing the fertile top-soil

Q.81 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 1 4 3 0 2 2 4 6 3 7 2 4 8 4 0 3 3 4 2 4 0 7 0 0 4 9 2 9 9 0 (Right)

What is the sum of the 1st digit from the left and the 12th digit from the right?

- Ans**
- ☐ 1. 5
 - ☐ 2. 4
 - ☒ 3. 3
 - ☐ 4. 0

Q.82 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. Only 1 person sits between T and S when counted from the left of S. Only 2 people sit between V and R when counted from the right of R. T and Q are immediate neighbours of P. S sits immediately to the left of U. How many people sit between Q and R when counted from the left of Q?

- Ans**
- ☒ 1. 3
 - ☐ 2. 4
 - ☐ 3. 1
 - ☐ 4. 2

Q.83 If a machine does 500 J of work in 4 seconds, what is its power output?

- Ans**
- ☐ 1. 2000 watt
 - ☐ 2. 250 watt
 - ☒ 3. 125 watt
 - ☐ 4. 8000 watt

Q.84 Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more than A to fill the cistern. How much time will be taken by A to fill the cistern separately?

- Ans**
- ☐ 1. 8 hours
 - ☐ 2. 1 hour
 - ☐ 3. 2 hours
 - ☒ 4. 6 hours

Q.85 In 2023, the Total Gross Enrollment Ratio (GER) for elementary schools in India stood at _____.

- Ans**
- ☒ 1. 100.1%
 - ☐ 2. 111.7%
 - ☐ 3. 110.2%
 - ☐ 4. 122.1%

Q.86 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JE-KF-LM

NI-OJ-PQ

- Ans**
- ☒ 1. QL-RM-SU
 - ☒ 2. OJ-PK-QS
 - ☒ 3. PK-QL-RT
 - ☒ 4. LG-MH-NO

Q.87 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All oranges are mangoes.

No mango is a banana.

Conclusions:

(I) No banana is a mango.

(II) All mangoes are oranges.

- Ans**
- ☒ 1. Neither conclusion I nor II follows
 - ☒ 2. Only conclusion II follows
 - ☒ 3. Only conclusion I follows
 - ☒ 4. Both conclusions I and II follow

Q.88 Excluding stoppages, the speed of a train is 45 km/h and including stoppages, it is 36 km/h. How many minutes does the train stop per hour?

- Ans**
- ☒ 1. 12 min
 - ☒ 2. 15 min
 - ☒ 3. 
 - ☒ 4. 10 min

Q.89 To achieve its target of becoming net carbon zero by 2035, Reliance Industries plans to replace transportation fuels with:

- Ans**
- ☒ 1. clean electricity and hydrogen
 - ☒ 2. solar and wind energy
 - ☒ 3. biomass and nuclear energy
 - ☒ 4. natural gas and biofuels

Q.90 Simplify the given expression.

$$3 + 3 \div 3 \times 3 - 3$$

- Ans**
- ☒ 1. -3
 - ☒ 2. 3
 - ☒ 3. 1
 - ☒ 4. 0

Q.91 Who among the following discovered the nucleus of an atom?

- Ans**
- ☐ 1. Neils Bohr
 - ☐ 2. JJ Thomson
 - ☐ 3. J Chadwick
 - ☒ 4. E Rutherford

Q.92 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

33, 41, 57, 89, 153, ?

- Ans**
- ☐ 1. 297
 - ☒ 2. 281
 - ☐ 3. 269
 - ☐ 4. 253

Q.93 If the position of an object is in between the principal focus and pole of a concave mirror, then the image formed will be:

- Ans**
- ☐ 1. real and diminished
 - ☒ 2. virtual, erect and enlarged
 - ☐ 3. virtual and diminished
 - ☐ 4. real and enlarged

Q.94 Express $\sin 54^\circ + \cos 72^\circ$ in terms of Trigonometric ratios of angles between 0° and 45° .

- Ans**
- ☐ 1. $\sin 36^\circ + \cos 18^\circ$
 - ☐ 2. $\cos 36^\circ + \cos 18^\circ$
 - ☒ 3. $\cos 36^\circ + \sin 18^\circ$
 - ☐ 4. $\sin 36^\circ + \sin 18^\circ$

Q.95 Amita bought a laptop at a 20% discount on its marked price. If she paid ₹28,400 for the laptop, what was its marked price?

- Ans**
- ☐ 1. ₹36,100
 - ☐ 2. ₹32,600
 - ☒ 3. ₹35,500
 - ☐ 4. ₹33,300

Q.96 In a certain code language, 'morning sun rises' is coded as 'xyq tdj zat', and 'sun rises brightly' is coded as 'tdj zat rfp'. What is the code for 'morning' in the given code language?

- Ans**
- ☐ 1. rfp
 - ☐ 2. tdj
 - ☒ 3. xyq
 - ☐ 4. zat

Q.97 একটি সংখ্যার পাঁচ-চতুর্থাংশ সেই সংখ্যার তিন-চতুর্থাংশের থেকে 7 অধিক। এই সংখ্যাটি নির্ণয় করুন।

- Ans**
- ☐ 1. 10
 - ☐ 2. 8
 - ☒ 3. 14
 - ☐ 4. 12

Q.98 Two numbers are in the ratio 7 : 5. If their positive difference is 360, then the greater number between them is:

- Ans**
- ☒ 1. 1260
 - ☐ 2. 1040
 - ☐ 3. 1500
 - ☐ 4. 900

Q.99 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

BEH, KNQ, TWZ, CFI, ?

- Ans**
- ☐ 1. LNP
 - ☐ 2. KNQ
 - ☒ 3. LOR
 - ☐ 4. KMO

Q.100 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 5 3 @ # 1 & 9 + Ω 6 £ * S 2 % 8 4 7 (Right)

How many such numbers are there, each of which is immediately preceded by a symbol and also immediately followed by another symbol?

- Ans**
- ☐ 1. 1
 - ☐ 2. 2
 - ☒ 3. 4
 - ☐ 4. 0

2024/12/22-12:05:31



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	ION Dizital Zone Faridabad
Test Date	23/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. AGM
 - ☒ 2. DJP
 - ☒ 3. MUI
 - ☒ 4. SYE

Q.2 Who presented the Union Budget 2024-25 in the Parliament on 23 July 2024?

- Ans**
- ☒ 1. Ms. Nirmala Sitharaman
 - ☒ 2. Shri Ashwini Vaishnaw
 - ☒ 3. Shri Bhupender Yadav
 - ☒ 4. Shri Shaktikanta Das

Q.3 The chemical reaction $\text{Fe(s)} + \text{CuSO}_4\text{(aq)} \rightarrow \text{FeSO}_4\text{(aq)} + \text{Cu(s)}$ represents which type of reaction?

- Ans**
- ☒ 1. Combustion reaction
 - ☒ 2. Double Displacement reaction
 - ☒ 3. Combination reaction
 - ☒ 4. Displacement reaction

Q.4 Seven boxes, A, B, C, D, E, F and G, are kept one over the other but not necessarily in the same order. F is kept second from the bottom. Only three boxes are kept between F and E. D is kept at one of the positions below F. Only A is kept between E and C. B is kept at one of the positions above E. How many boxes are kept between E and D?

- Ans**
- ☒ 1. 3
 - ☒ 2. 2
 - ☒ 3. 1
 - ☒ 4. 4

Q.5 Ferrous sulphate decomposes to which of the following substances?

- Ans**
- ☐ 1. Ferric oxide (Fe_2O_3) only
 - ☒ 2. Ferric oxide (Fe_2O_3), sulphur dioxide (SO_2) and sulphur trioxide (SO_3)
 - ☐ 3. Ferric oxide (Fe_2O_3) and sulphur dioxide (SO_2) only
 - ☐ 4. Ferric oxide (Fe_2O_3) and sulphur trioxide (SO_3) only

Q.6 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All laptops are speakers.

All speakers are mics.

Conclusions:

(I) At least some speakers are laptops.

(II) All laptops are mics.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Both conclusions I and II follow
 - ☐ 4. Neither conclusion I nor II follows

Q.7 Who was awarded the Vigyan Ratna - 2024 for contributions in the field of Biological Sciences?

- Ans**
- ☐ 1. Dr. Ramesh Sharma
 - ☐ 2. Dr. Aditi Sen De
 - ☐ 3. Dr. Swati Nayak
 - ☒ 4. Prof. Govindarajan Padmanabhan

Q.8 In August 2024, who among the following was awarded the M.S. Swaminathan Award for Environment Protection 2024?

- Ans**
- ☒ 1. Anant Darshan Shankar
 - ☐ 2. Sundar Lal Bahuguna
 - ☐ 3. Rajendra Singh
 - ☐ 4. Sunita Narain

Q.9 Which of the following is the most reactive metal in the reactivity series?

- Ans**
- ☒ 1. Potassium
 - ☐ 2. Zinc
 - ☐ 3. Sodium
 - ☐ 4. Gold

Q.10 Which of the following is specialised for conducting information via electrical impulses from one part of the body to another?

- Ans**
- ☒ 1. Neuron
 - ☐ 2. Spinal cord
 - ☐ 3. Glomerulus
 - ☐ 4. Alveoli

Q.11 Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 12 km/h and speed of the other is 13 km/h. After how long will they be 6 km apart if they start driving together?

- Ans**
- ☒ 1. 1 hour
 - ☒ 2. 2 hours
 - ☒ 3. 2 hours 10 minutes
 - ☒ 4. 1 hour 30 minutes

Q.12 What is the unit of refractive index?

- Ans**
- ☒ 1. m^3
 - ☒ 2. Unitless
 - ☒ 3. m/s^2
 - ☒ 4. m/s

Q.13 Which of the following options does NOT represent a characteristic of solids?

- Ans**
- ☒ 1. Solids have indistinct boundaries.
 - ☒ 2. Solids have negligible compressibility.
 - ☒ 3. Solids have a definite shape.
 - ☒ 4. Solids have fixed volume.

Q.14 A cylindrical cavity of radius 3 cm and depth 2 cm is made at one end of another solid cylinder of radius 5 cm and height 7 cm. Find the total surface area (in cm^2) of the resulting solid.

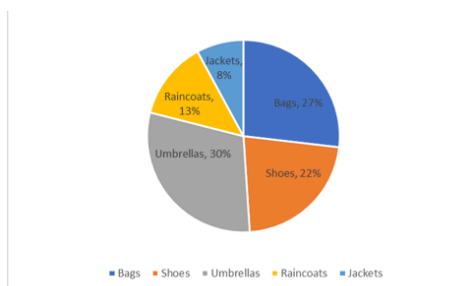
- Ans**
- ☒ 1. 126π
 - ☒ 2. 132π
 - ☒ 3. 107π
 - ☒ 4. 82π

Q.15 There are dead tissues in the _____.

- Ans**
- ☒ 1. coconut husk
 - ☒ 2. orange peel
 - ☒ 3. banana peel
 - ☒ 4. guava peel

Q.16 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of sales of the different products of Company X in the year 2022.



If the total number of items sold by the company was 1000 in 2022, what was the total number of raincoats and jackets sold by the company in the year?

- Ans**
- ☒ 1. 180
 - ☒ 2. 200
 - ☒ 3. 210
 - ☒ 4. 230

Q.17 If $\operatorname{cosec} 2\theta = \sec(\theta - 30)^\circ$, then find the measure of θ (in degrees).

- Ans**
- ☒ 1. 45
 - ☒ 2. 25
 - ☒ 3. 35
 - ☒ 4. 40

Q.18 Which of the following statements is true about the free fall of an object under gravitational force?

- Ans**
- ☒ 1. The acceleration experienced by an object is opposite to the direction of motion.
 - ☒ 2. The acceleration experienced by an object is independent of its mass.
 - ☒ 3. The velocity of the object remains constant during free fall.
 - ☒ 4. The acceleration experienced by an object depends on its mass.

Q.19 The 38th Maharashtra State Junior Athletics Championships was held in _____.

- Ans**
- ☒ 1. Nagpur
 - ☒ 2. Mumbai
 - ☒ 3. Pune
 - ☒ 4. Nashik

Q.20 _____ are found in the epidermis of a leaf.

- Ans**
- ☒ 1. Stomata
 - ☒ 2. Chlorenchyma
 - ☒ 3. Aerenchyma
 - ☒ 4. Vascular bundle

Q.21 The phenomenon of scattering of light by the colloidal particles gives rise to:

- Ans**
- ☒ 1. delay in sunset
 - ☒ 2. twinkling of stars
 - ☒ 3. rainbow
 - ☒ 4. Tyndall effect

Q.22 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 4 9 6 8 1 3 9 4 9 8 8 4 3 9 8 5 7 2 6 5 6 9 2 8 4 8 9 5 5 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 3
 - ☐ 2. 5
 - ☐ 3. 0
 - ☒ 4. 4

Q.23 Which of the following statements is/are correct related to eco-system?

- (i) UV radiation is not damaging to organisms.
- (ii) Ozone at the higher levels of the atmosphere is a product of UV radiation acting on oxygen molecule.
- (iii) The amount of ozone in the atmosphere began to drop sharply in 1980.

- Ans**
- ☐ 1. Only (i)
 - ☒ 2. Only (ii) and (iii)
 - ☐ 3. Only (i) and (ii)
 - ☐ 4. (i), (ii) and (iii)

Q.24 In a college entrance test, the average marks obtained by all 30 boys of the class is 5 less than the average marks obtained by all 20 girls of the class. If the average marks of the whole class are 25, then find the ratio of average marks of boys to that of girls.

- Ans**
- ☐ 1. 32 : 41
 - ☐ 2. 41 : 32
 - ☒ 3. 23 : 28
 - ☐ 4. 28 : 23

Q.25 The difference between two numbers is 46 and they are in the ratio 5 : 3. Find the smaller number.

- Ans**
- ☐ 1. 36
 - ☐ 2. 46
 - ☒ 3. 69
 - ☐ 4. 63

Q.26 All of the following are signals that sexual maturation is taking place, EXCEPT:

- Ans**
- ☐ 1. increased size and shape of breast or penis
 - ☐ 2. different patterns of hair growth
 - ☒ 3. blue colour of eyes
 - ☐ 4. girls begin to menstruate at around this time

Q.27 In a certain code language, 'metro city transport' is coded as 'qi de pu' and 'train national transport' is coded as 'la qi ti'. What is the code for 'transport' in the given code language?

- Ans**
- ☐ 1. pu
 - ☐ 2. de
 - ☒ 3. qi
 - ☐ 4. la

Q.28 A and B can do a piece of work in 6 days and 8 days, respectively. With the help of C, they completed the work in 3 days and earned ₹3,848. What was the share of C?

- Ans**
- ☐ 1. ₹861
 - ☒ 2. ₹481
 - ☐ 3. ₹1,443
 - ☐ 4. ₹1,693

Q.29 'Project Udbhav is an initiative aimed at rediscovering and integrating ancient Indian military knowledge from texts on statecraft, warfare, diplomacy and grand strategy into modern military practices.' Who launched Project Udbhav?

- Ans**
- ☒ 1. Indian Army and United Service Institution (USI)
 - ☐ 2. Ministry of Defence and National Defence Academy (NDA)
 - ☐ 3. Army Training Command (ARTRAC) and Indian Air Force
 - ☐ 4. Indian Navy and Defence Research and Development Organisation (DRDO)

Q.30 Which of the following is equal to 1 Ohm (If V and A are volt and ampere, respectively)?

- Ans**
- ☐ 1. $1V/2A$
 - ☐ 2. $1A/1V$
 - ☐ 3. $1V * 1A$
 - ☒ 4. $1V/1A$

Q.31 What will be the atomicity of oxygen and phosphorous?

- Ans**
- ☐ 1. Diatomic and monoatomic
 - ☒ 2. Diatomic and tetra-atomic
 - ☐ 3. Diatomic and diatomic
 - ☐ 4. Diatomic and triatomic

Q.32 The 8th edition of India-Kazakhstan Joint Military Exercise KAZIND-2024 was held in ____.

- Ans**
- ☐ 1. Pune, Maharashtra
 - ☐ 2. Jaisalmer, Rajasthan
 - ☒ 3. Auli, Uttarakhand
 - ☐ 4. Shillong, Meghalaya

Q.33 Which of the following is an example of a mixture?

- Ans**
- ☐ 1. Salt (NaCl)
 - ☒ 2. Air
 - ☐ 3. Iron (Fe)
 - ☐ 4. Water (H₂O)

Q.34 In a certain code language, 'PLATE' is coded as '25693' and 'MASK' is coded as '3417' and 'KEPT' is coded as '4695'. What is the code for 'L' in the given code language?

- Ans**
- ☐ 1. 4
 - ☐ 2. 5
 - ☐ 3. 9
 - ☒ 4. 2

Q.35 The atomic number of an element is determined by the number of:

Ans ☐ 1. both protons and neutrons

☐ 2. neutrons

☐ 3. electrons

☒ 4. protons

Q.36 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

TWP, SVO, RUN, QTM, ?

Ans ☒ 1. PSL

☐ 2. LPS

☐ 3. LSP

☐ 4. PLS

Q.37 Which of the following is divisible by 2, 3, and 5?

Ans ☒ 1. 3150

☐ 2. 54332

☐ 3. 14175

☐ 4. 2240

Q.38 If the thrust experienced by an object of area 1000 cm² is 50 N, then the pressure exerted on the object is:

Ans ☐ 1. 5 Pa

☐ 2. 30 Pa

☒ 3. 500 Pa

☐ 4. 20 Pa

Q.39 Which of the following organisms is commonly referred to as bread mould?

Ans ☒ 1. Rhizopus

☐ 2. Planaria

☐ 3. Spirogyra

☐ 4. Yeast

Q.40 In an election between two candidates, one candidate got 38% of the votes and yet lost by 7200 votes. If all the votes polled were valid, then the total number of votes cast in the election was:

Ans ☐ 1. 13,800

☐ 2. 13,000

☐ 3. 

☒ 4. 30,000

Q.41 Plant cells change shape by changing the amount of _____ in them, resulting in swelling or shrinking, and therefore in changing shapes.

Ans ☐ 1. carbon dioxide

☐ 2. chlorophyll

☒ 3. water

☐ 4. fat

Q.42 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only one person sits between L and E when counted from the left of E. G sits third to the right of N. M sits third to the left of F. G sits to the immediate right of M. D is not an immediate neighbour of M. How many people sit between D and E when counted from the right of D?

- Ans**
- ☐ 1. One
 - ☒ 2. Three
 - ☐ 3. Four
 - ☐ 4. Two

Q.43 Sometimes, when there is a lack of oxygen in our muscle cells, the pyruvate by anaerobic respiration is converted into:

- Ans**
- ☐ 1. acetic acid
 - ☐ 2. methyl alcohol
 - ☐ 3. ethyl alcohol
 - ☒ 4. lactic acid

Q.44 If $2^K \times 4^{12} = 16^{11}$, then the value of K is:

- Ans**
- ☐ 1. 16
 - ☒ 2. 20
 - ☐ 3. 10
 - ☐ 4. 24

Q.45 A current of 1 A is drawn by a filament of an electric bulb. The number of electrons passing through a cross-section of the filament in 8 mins would be equal to ____.

(Given, charge of electron (e) is equal to 1.6×10^{-19} C)

- Ans**
- ☐ 1. 3×10^{20}
 - ☐ 2. 3×10^{22}
 - ☐ 3. 3×10^{19}
 - ☒ 4. 3×10^{21}

Q.46 The tissue which makes the plant hard and stiff and provides strength to the plant parts is the:

- Ans**
- ☐ 1. collenchyma
 - ☐ 2. aerenchyma
 - ☒ 3. sclerenchyma
 - ☐ 4. chlorenchyma

Q.47 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ 1. RM-OT
 - ☐ 2. JE-GK
 - ☐ 3. SN-PT
 - ☐ 4. LG-IM

Q.48 In the digestive system, which of the following releases hydrochloric acid, a protein digesting enzyme called pepsin, and mucus?

- Ans**
- ✓ 1. Gastric glands
 - ✗ 2. Pancreas
 - ✗ 3. Gall bladder
 - ✗ 4. Salivary glands

Q.49 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. Only two people sit between F and K when counted from the right of F. Only two people sit between K and C. Only three people sit between F and D. B sits to the immediate left of G.

Who sits third to the left of E?

- Ans**
- ✗ 1. F
 - ✗ 2. K
 - ✗ 3. B
 - ✓ 4. G

Q.50 96 is divided into two parts in such a way that a seventh part of the first and a ninth part of the second are equal. Find the larger part.

- Ans**
- ✗ 1. 38
 - ✗ 2. 42
 - ✗ 3. 48
 - ✓ 4. 54

Q.51 A constant force of 4 N acts on a box of mass 2 kg for a duration of 2 s. If its initial velocity is 2 m/s, then the final velocity of this box will be:

- Ans**
- ✗ 1. 4 m/s
 - ✗ 2. 3 m/s
 - ✓ 3. 6 m/s
 - ✗ 4. 2 m/s

Q.52 Gopi starts from Point A and drives 100 km towards East. He then takes a left turn, drives 55 km, turns left and drives 75 km. He then takes a left turn and drives 45 km. He takes a final right turn, drives 25 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✗ 1. 8 km towards North
 - ✗ 2. 8 km towards South
 - ✗ 3. 10 km towards North
 - ✓ 4. 10 km towards South

Q.53 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 65 :: 15 : Y

- Ans**
- ✗ 1. X = 19, Y = 80
 - ✗ 2. X = 12, Y = 75
 - ✗ 3. X = 19, Y = 85
 - ✓ 4. X = 12, Y = 80

Q.54 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$14 \text{ A } 2 \text{ B } 6 \text{ D } 20 \text{ C } 5 = ?$$

- Ans**
- ☒ 1. 25
 - ☒ 2. 22
 - ☐ 3. 30
 - ☐ 4. 28

Q.55 If A earns $33\frac{1}{3}\%$ more than B, then B earns less than A by:

- Ans**
- ☐ 1. 50%
 - ☐ 2. $16\frac{2}{3}\%$
 - ☐ 3. $33\frac{1}{3}\%$
 - ☒ 4. 25%

Q.56 What will come in the place of the question mark '?' in the following equation, if '+' and '−' are interchanged and '×' and '÷' are interchanged?

$$10 \times 5 - 13 \div 4 \div 3 = ?$$

- Ans**
- ☒ 1. 3
 - ☐ 2. 7
 - ☐ 3. 11
 - ☐ 4. 6

Q.57 Simplify the following expression:

$$9994 \times 10006$$

- Ans**
- ☒ 1. 99999964
 - ☐ 2. 9999924
 - ☐ 3. 91999924
 - ☐ 4. 99999976

Q.58 IEMJ is related to GCKH in a certain way based on the English alphabetical order. In the same way, MIQN is related to KGOL. To which of the following options is PLTQ related, following the same logic?

- Ans**
- ☒ 1. NJRO
 - ☐ 2. JNOR
 - ☐ 3. NJOR
 - ☐ 4. JNRO

Q.59 Two pipes A and B can fill a cistern in $37\frac{1}{2}$ minutes and 45 minutes, respectively. Both pipes are open. The cistern will be filled in just half an hour, if the B is turned off after:

- Ans**
- ☐ 1. 10 min
 - ☐ 2. 5 min
 - ☐ 3. 15 min
 - ☒ 4. 9 min

Q.60 What should be subtracted from $\frac{-5}{6}$ to get 1?

- Ans
- ☒ 1. $\frac{-1}{6}$
 - ☒ 2. $\frac{7}{6}$
 - ☒ 3. $\frac{-11}{6}$
 - ☒ 4. $\frac{-7}{6}$

Q.61 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 2 9 7 2 1 5 9 6 8 6 0 1 1 7 8 4 7 5 0 9 3 3 9 0 2 5 0 7 1 5 (Right)

What is the sum of the 12th digit from the left and the 7th digit from the right?

- Ans
- ☒ 1. 1
 - ☒ 2. 0
 - ☒ 3. 3
 - ☒ 4. 4

Q.62 Consider a long conducting wire carrying a current. Which of the following statements is NOT true?

- Ans
- ☒ 1. The strength of the magnetic field increases if we increase the current.
 - ☒ 2. The magnetic field will reverse the direction if we reverse the current.
 - ☒ 3. We can use Fleming's left-hand rule to determine the direction of magnetic field.
 - ☒ 4. The magnetic field decreases as we move away from the wire.

Q.63 Which of the following statements is/are correct related to eco-system?

- (i) Non-biodegradable substance harms the various members of eco-system.
- (ii) Non-biodegradable substances break-down by biological processes.
- (iii) Non-biodegradable substances never persist in the environment.

- Ans
- ☒ 1. (i), (ii) and (iii)
 - ☒ 2. Only (i) and (ii)
 - ☒ 3. Only (ii) and (iii)
 - ☒ 4. Only (i)

Q.64 Which of the following represents the correct formula for calcium oxide?

- Ans
- ☒ 1. CaO
 - ☒ 2. CaO₂
 - ☒ 3. Ca₂O₃
 - ☒ 4. Ca₂O

Q.65 The mode of the observations 2, 6, 3, 9, 5, 6, 7, 8, 4, 6, 10, 6 and 11 is:

- Ans**
- ☐ 1. 10
 - ☐ 2. 7
 - ☐ 3. 11
 - ☒ 4. 6

Q.66 An object with a mass of 10 kg is moving with an initial velocity of 3 m/s and its final velocity becomes 5 m/s. Then the change in its kinetic energy is:

- Ans**
- ☐ 1. 160 J
 - ☐ 2. 50 J
 - ☐ 3. 40 J
 - ☒ 4. 80 J

Q.67 Find the fourth proportional of 24, 8 and 9.

- Ans**
- ☐ 1. 8
 - ☐ 2. 24
 - ☒ 3. 3
 - ☐ 4. 9

Q.68 An object A with a mass m and velocity v has a kinetic energy of 100 J. Then the kinetic energy of an object B with a mass of $2m$ and velocity v is:

- Ans**
- ☐ 1. 400 J
 - ☒ 2. 200 J
 - ☐ 3. 50 J
 - ☐ 4. 300 J

Q.69 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

FRE, HTD, JVC, LXB, ?

- Ans**
- ☐ 1. MZA
 - ☐ 2. OYA
 - ☒ 3. NZA
 - ☐ 4. MYA

Q.70 Hydrophobic end and hydrophilic end of soap molecule:

- Ans**
- ☐ 1. interacts with water and interacts with acid, respectively
 - ☐ 2. interacts with water and interacts with hydrocarbons, respectively
 - ☒ 3. interacts with hydrocarbons and interacts with water, respectively
 - ☐ 4. interacts with hydrocarbons and interacts with base, respectively

Q.71 Which of the following were found as dominant traits by Mendel in his experiment with pea plants?

- Ans**
- ☐ 1. Short plant and round seed
 - ☒ 2. Tall plant and round seed
 - ☐ 3. Short plant and wrinkled seed
 - ☐ 4. Tall plant and wrinkled seed

Q.72 A right circular cylindrical tunnel of diameter 2 m and length 40 m is to be constructed from a sheet of iron. The area of the iron sheet required in m^2 , is:

- Ans**
- ☒ 1. 200π
 - ☒ 2. 80π
 - ☒ 3. 160π
 - ☒ 4. 40π

Q.73 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A $\div$ B' means 'A is the son of B'.

How is M related to P if 'K $\div$ L - M + N x O + P'?

- Ans**
- ☒ 1. Sister
 - ☒ 2. Mother's sister
 - ☒ 3. Mother
 - ☒ 4. Daughter

Q.74 What is the value of 1 kWh in Joule(J)?

- Ans**
- ☒ 1. 3.6×10^5
 - ☒ 2. 3.6
 - ☒ 3. 3.6×10^6
 - ☒ 4. 3.6×10^{-5}

Q.75 The atomic number of phosphorus atom is:

- Ans**
- ☒ 1. 15
 - ☒ 2. 16
 - ☒ 3. 17
 - ☒ 4. 14

Q.76 Which statement is true for solid matter?

- Ans**
- ☒ 1. Solids have only definite shape, but not fixed volume.
 - ☒ 2. Solids have a definite shape, distinct boundary and fixed volume.
 - ☒ 3. Solids have only definite shape, but not distinct boundary.
 - ☒ 4. Solids do not have a definite shape, distinct boundary and fixed volume.

Q.77 Chlorination of alkane is an example of:

- Ans**
- ☒ 1. both addition and substitution chain reaction
 - ☒ 2. substitution reaction
 - ☒ 3. rearrangement reaction
 - ☒ 4. addition reaction

Q.78 The energy possessed by a ball of mass 5 kg when it is raised to a height of 5 m above the ground is (take $g = 10 \text{ m/s}^2$):

- Ans**
- ☐ 1. 2 J
 - ☒ 2. 250 J
 - ☐ 3. 10 J
 - ☐ 4. 2.5 J

Q.79 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 7 2 1 5 7 6 8 9 7 6 4 9 8 1 6 5 9 5 8 6 2 6 9 5 4 9 6 3 0 3 (Right)

What is the sum of the 1st digit from the left and the 7th digit from the right?

- Ans**
- ☐ 1. 14
 - ☐ 2. 10
 - ☐ 3. 13
 - ☒ 4. 12

Q.80 Select the correct IUPAC names for CH_3COCH_3 and $\text{C}_2\text{H}_5\text{OH}$ compounds, respectively.

- Ans**
- ☐ 1. Propanone and methanol
 - ☐ 2. Propanoic acid and ethanol
 - ☒ 3. Propanone and ethanol
 - ☐ 4. Ethanol and propanone

Q.81 What price should a shopkeeper mark on an article, which costs him ₹136, to gain 20% after allowing a discount of 15%?

- Ans**
- ☐ 1. ₹224
 - ☒ 2. ₹192
 - ☐ 3. ₹216
 - ☐ 4. ₹162

Q.82 Anu is two years older than Kanu, who is twice as old as Tanu. If the total of their ages is 32, then what is the age of Kanu?

- Ans**
- ☐ 1. 8 years
 - ☐ 2. 7 years
 - ☐ 3. 14 years
 - ☒ 4. 12 years

Q.83 A sum when invested at $12\frac{1}{2}\%$ simple interest per annum amounts to ₹17,500 after 2 years. What is the simple interest?

- Ans**
- ☐ 1. ₹3,650
 - ☒ 2. ₹3,500
 - ☐ 3. ₹3,450
 - ☐ 4. ₹3,700

Q.84 Evaluate the given expression.

$$\left(\frac{1}{64}\right)^{(-1/3)}$$

- Ans**
- ☐ 1. 2^{-1}
 - ☒ 2. 4
 - ☐ 3. 4^{-1}
 - ☐ 4. 

Q.85 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

351, 380, 413, 450, 491, ?

- Ans**
- ☒ 1. 536
 - ☐ 2. 512
 - ☐ 3. 541
 - ☐ 4. 530

Q.86 Which of the following is/are NOT related to the phenomenon of the universal law of gravitation?

- (A) The motion of the moon around the earth.
- (B) The tides caused by the moon.
- (C) The motion of electron around the nucleus.

- Ans**
- ☐ 1. (A) and (B)
 - ☐ 2. Only (B)
 - ☒ 3. Only (C)
 - ☐ 4. (B) and (C)

Q.87 In July 2024, Charaideo Maidam was included in the UNESCO World Heritage Site list in the cultural category. In which of the following states is it located?

- Ans**
- ☐ 1. Bihar
 - ☐ 2. West Bengal
 - ☐ 3. Odisha
 - ☒ 4. Assam

Q.88 On ____ December 2023, the National Level Programme on Anganwadi-Cum-Crèche released the Standard Operating Procedure (SOP) for the scheme in New Delhi.

- Ans**
- ☐ 1. 29th
 - ☒ 2. 21st
 - ☐ 3. 23rd
 - ☐ 4. 27th

Q.89 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some files are photos.

All photos are pictures.

Conclusions:

(I) No pictures are files.

(II) Some pictures are files.

- Ans**
- ✓ 1. Only conclusion (II) follows
 - ✗ 2. Only conclusion (I) follows
 - ✗ 3. Both conclusions (I) and (II) follow
 - ✗ 4. Neither conclusion (I) nor (II) follows

Q.90 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The Institute has come under scrutiny from the Committee for failing to conduct a dozen regular programmes despite an increase in employees and for failing to create a solid action plan for studies and research.

Courses of Action:

I. To carry out a workable action plan, the institute's overarching objectives need to be redefined.

II. The Institute needs to provide a report on the factors that prevented the planned programmes from being carried out.

- Ans**
- ✗ 1. Only II follows
 - ✓ 2. Both I and II follow
 - ✗ 3. Only I follows
 - ✗ 4. Neither I nor II follows

Q.91 Find the simple interest on ₹800 at 7% per month in 9 months.

- Ans**
- ✗ 1. ₹514
 - ✗ 2. ₹534
 - ✓ 3. ₹504
 - ✗ 4. ₹524

Q.92 For the first time in the General Elections 2024, which facility has been extended pan-India for only senior citizens and Persons with Disabilities?

- Ans**
- ✗ 1. Early voting
 - ✓ 2. Home voting
 - ✗ 3. Postal voting
 - ✗ 4. Online voting

Q.93 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 59 :: 20 : Y

Ans ☒ 1. X = 15, Y = 80

☒ 2. X = 16, Y = 79

☒ 3. X = 16, Y = 80

☒ 4. X = 15, Y = 79

Q.94 In which simple multi-cellular organism does sporangia develop on hyphae and spore formation occurs in sporangia?

Ans ☒ 1. Leishmania

☒ 2. Yeast

☒ 3. Rhizopus

☒ 4. Amoeba

Q.95 If A, B, C and D, the measures of the four angles of a quadrilateral, are in the ratio 3 : 5 : 4 : 6, then the value of $3A + 2B$ is:

Ans ☒ 1. 330°

☒ 2. 380°

☒ 3. 340°

☒ 4. 360°

Q.96 A box full of dry fruits weighs 12.650 kg. If the weight of the dry fruits is 9 kg 800 g, the weight of the empty box is:

Ans ☒ 1. 2750 g

☒ 2. 2725 g

☒ 3. 2850 g

☒ 4. 2825 g

Q.97 A bought an item for ₹384 and sold it for ₹576. B bought another item for ₹1,254 and sold it for ₹1,672. What is the ratio of the gain percentage of A to the gain percentage of B?

Ans ☒ 1. $\frac{5}{2}$

☒ 2. $\frac{5}{3}$

☒ 3. $\frac{3}{4}$

☒ 4. $\frac{3}{2}$

Q.98 The roots of a plant always grow downwards while the shoots usually grow upwards and away from the earth. This upward and downward growth of shoots and roots is known as:

Ans ☒ 1. hydrotropism

☒ 2. chemotropism

☒ 3. geotropism

☒ 4. phototropic movement

Q.99 KPNS is related to QVTY in a certain way based on the English alphabetical order. In the same way, HMKP is related to NSQV. To which of the following options is DIGL related, following the same logic?

- Ans**
- ☐ 1. OJMR
 - ☐ 2. OJRM
 - ☒ 3. JOMR
 - ☐ 4. JORM

Q.100 Who among the following became India's youngest Olympic medallist by winning a bronze in wrestling at the 2024 Paris Paralympics?

- Ans**
- ☒ 1. Aman Sehrawat
 - ☐ 2. Sumit Antil
 - ☐ 3. Praveen Kumar
 - ☐ 4. Vinod Kumar

2024/12/26-15:17:53



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Digitrack IT Services
Test Date	23/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The pollen needs to be transferred from the stamen to the stigma. If this transfer of pollen occurs in the same flower, this phenomenon is known as:

- Ans**
- ☒ 1. fertilisation
 - ☒ 2. cross-pollination
 - ☒ 3. spore formation
 - ☒ 4. self-pollination

Q.2 What is the value of power if a man does 50 J of work in 10 s ?

- Ans**
- ☒ 1. 5 W
 - ☒ 2. 500 W
 - ☒ 3. 50 W
 - ☒ 4. 0.5 W

Q.3 How are three resistances 3 Ω , 4 Ω , and 6 Ω connected in combination, so that their total resistance will be 13 Ω ?

- Ans**
- ☒ 1. All in series
 - ☒ 2. Does not depend on any combination
 - ☒ 3. 3 Ω in series with 6 Ω and 4 Ω in parallel
 - ☒ 4. All in parallel

Q.4 The Union Budget 2024-25 outlines a comprehensive strategy to achieve 'Viksit Bharat' by focusing on _____ key priorities that aim to create abundant opportunities for all citizens. Together, these initiatives are designed to propel India towards a developed nation status.

- Ans**
- ☒ 1. five
 - ☒ 2. eight
 - ☒ 3. ten
 - ☒ 4. nine

Q.5 The third edition of the joint military exercise 'AUSTRALIND' is being conducted between the armies of which two countries?

- Ans**
- ✓ 1. India and Australia
 - ✗ 2. India and New Zealand
 - ✗ 3. India and Singapore
 - ✗ 4. India and Japan

Q.6 JGLI is related to NKPM in a certain way based on the English alphabetical order. In the same way, PMRO is related to TQVS. To which of the following options is MJOL related, following the same logic?

- Ans**
- ✗ 1. NQSP
 - ✗ 2. NQPS
 - ✓ 3. QNSP
 - ✗ 4. QNPS

Q.7 Pranay starts from Point A and drives 45 km towards North. He then takes a right turn, drives 35 km, turns right and drives 75 km. He then takes a right turn and drives 25 km. He takes a final right turn, drives 30 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✗ 1. 10 km towards North
 - ✓ 2. 10 km towards West
 - ✗ 3. 10 km towards South
 - ✗ 4. 10 km towards East

Q.8 For a candidate to clear an examination, he/she must score 55% marks. If he/she gets 120 marks and fails by 78 marks, the total marks of the examination is:

- Ans**
- ✗ 1. 400
 - ✓ 2. 360
 - ✗ 3. 320
 - ✗ 4. 300

Q.9 Two trains 135 m and 155 m in length, respectively, are running in opposite directions, one at the rate of 80 km/h and the other at the rate of 65 km/h. In how much time will they be completely clear of each other from the moment they meet?

- Ans**
- ✓ 1. 7.2 sec
 - ✗ 2. 7.5 sec
 - ✗ 3. 6.5 sec
 - ✗ 4. 6.8 sec

Q.10 Which of the following reactions is an example of decomposition reaction?

- Ans**
- ✓ 1. Silver chloride turns grey in sunlight
 - ✗ 2. Burning of natural gas
 - ✗ 3. Formation of water from $H_2(g)$ and $O_2(g)$
 - ✗ 4. Burning of coal

Q.11 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. FUT
 - ✗ 2. CEG
 - ✗ 3. JLN
 - ✗ 4. TVX

Q.12 At what rate (in percentage) per annum will a sum of money double itself in 16 years on simple interest?

- Ans**
- ✗ 1. 12.5%
 - ✗ 2. 2.5%
 - ✓ 3. 6.25%
 - ✗ 4. 5.6%

Q.13 Anu is two years older than Kanu, who is twice as old as Tanu. If the total of their ages is 32, then what is the difference in age of Anu and Tanu?

- Ans**
- ✓ 1. 8 years
 - ✗ 2. 7 years
 - ✗ 3. 14 years
 - ✗ 4. 12 years

Q.14 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 9 1 1 5 7 8 0 4 5 9 9 4 6 9 4 1 6 6 8 1 4 3 5 0 2 1 9 8 6 1 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ✗ 1. 3
 - ✗ 2. 2
 - ✗ 3. 1
 - ✓ 4. 5

Q.15 Which body part in the human body is composed of stratified squamous epithelium?

- Ans**
- ✗ 1. Lining of the kidney tubules
 - ✓ 2. Skin
 - ✗ 3. Lining of the intestine
 - ✗ 4. Oesophagus

Q.16 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

FJN, IMQ, LPT, OSW, ?

- Ans**
- ✗ 1. SUY
 - ✗ 2. RUZ
 - ✗ 3. RUY
 - ✓ 4. RVZ

Q.17 Pipe A is 3 times faster than pipe B. Both pipes together fill a tank in 36 min. How much time will pipe A alone take to fill the tank?

- Ans**
- ☐ 1. 156 min
 - ☐ 2. 80 min
 - ☐ 3. 100 min
 - ☒ 4. 48 min

Q.18 Six people—Adam, Brad, Clara, David, Emily and Farah—are sitting in a straight line, facing north. Only one person sits to the left of Clara. Only one person sits between Clara and Brad. David sits second to the right of Emily. Adam is neither an immediate neighbour of Clara nor sits at the extreme end of the line.

Q. Who sits at the extreme right end of the line?

- Ans**
- ☒ 1. Farah
 - ☐ 2. David
 - ☐ 3. Brad
 - ☐ 4. Emily

Q.19 PQRS is a trapezium in which $QR \parallel PS$ and $PR = RS$. If $\angle PQR = 96^\circ$ and $\angle QPR = 34^\circ$, then what is the measure of $\angle PRS$?

- Ans**
- ☐ 1. 75°
 - ☒ 2. 80°
 - ☐ 3. 70°
 - ☐ 4. 65°

Q.20 The carbohydrates which are not used immediately are stored in the form of _____, which serves as the internal energy reserve to be used as and when required by the plant.

- Ans**
- ☐ 1. cellulose
 - ☒ 2. starch
 - ☐ 3. glucose
 - ☐ 4. glycogen

Q.21 Which of the following tissues is present in stems, around vascular bundles, in the veins of leaves and the hard covering of seeds and nuts?

- Ans**
- ☐ 1. Apical meristem
 - ☐ 2. Epidermis
 - ☐ 3. Parenchyma
 - ☒ 4. Sclerenchyma

Q.22 Refer to the following number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 9 + % 8 4 5 3 @ \$ 7 & Ω 6 # 1 * £ (Right)

How many such symbols are there, each of which is immediately preceded by another symbol and also immediately followed by a number?

- Ans**
- ☐ 1. 2
 - ☐ 2. 1
 - ☒ 3. 3
 - ☐ 4. 4

Q.23 The smallest 3-digit natural number that is completely divisible by 8 and 12 is:

Ans ☒ 1. 124

☒ 2. 120

☒ 3. 108

☒ 4. 144

Q.24 An amount is distributed among A, B and C in the ratio of 5: 7: 15. If B's share is ₹1,400 out of the total amount, then the total amount is:

Ans ☒ 1. ₹8,100

☒ 2. ₹2,700

☒ 3. ₹5,400

☒ 4. ₹4,200

Q.25 What is the primary difference between the particles of a solid and those of a gas?

Ans ☒ 1. Solid particles move more freely than gas particles.

☒ 2. Solid particles are more closely packed than gas particles.

☒ 3. Solid particles have more energy than gas particles.

☒ 4. Solid particles are made of different elements than gas particles.

Q.26 What will come in the place of '?' in the following equation, if '-' and 'x' are interchanged and '+' and '÷' are interchanged?

$$23 \times 13 - 7 \div 14 + 7 = ?$$

Ans ☒ 1. -66

☒ 2. -56

☒ 3. -92

☒ 4. -76

Q.27 Select the correct equation(s) that relate(s) the final and initial velocity of a freely falling object with respect to time.

(A) $s = ut + 2at^2$

(B) $v = u + \frac{1}{2}at$

(C) $(v - u) = at$

Ans ☒ 1. (B) and (C)

☒ 2. Only (C)

☒ 3. (A) and (B)

☒ 4. Only (A)

Q.28 Which hormone is present in greater concentration in areas of rapid cell division and promote cell division?

Ans ☒ 1. Cytokinin

☒ 2. Absciscic acid

☒ 3. Gibberellins

☒ 4. Auxins

Q.29 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. FAW
 - ✗ 2. XSN
 - ✗ 3. EZU
 - ✗ 4. WRM

Q.30 According to the Bohr's model, what is the maximum number of electrons for the second energy level?

- Ans**
- ✗ 1. 6
 - ✗ 2. 4
 - ✓ 3. 8
 - ✗ 4. 2

Q.31 A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

- Ans**
- ✗ 1. 4 hours 15 min
 - ✗ 2. 4 hours
 - ✓ 3. 3 hours 45 min
 - ✗ 4. 3 hours 15 min

Q.32 In which of the following states was the 4th Asmita Khelo India National Judo League/Ranking Judo Tournament 2024-25 held?

- Ans**
- ✗ 1. Karnataka
 - ✗ 2. Madhya Pradesh
 - ✗ 3. Jharkhand
 - ✓ 4. Kerala

Q.33 What historic achievement did Manu Bhaker accomplish at the 2024 Paris Olympics?

- Ans**
- ✗ 1. First Indian to win an Olympic medal in shooting
 - ✗ 2. First athlete to win medals in both individual and team events
 - ✗ 3. First Indian female shooter to win an Olympic gold
 - ✓ 4. First athlete of independent India to win two Olympic medals in a single edition

Q.34 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 % 8 4 5 3 @ # 1 * \$ 7 & 9 + Ω 6 £ (Right)

How many such numbers are there, each of which is immediately preceded by another number and also immediately followed by a symbol?

- Ans**
- ✓ 1. 1
 - ✗ 2. 2
 - ✗ 3. 0
 - ✗ 4. 3

Q.35 Among all the seven-coloured lights, which colour deviates the most after falling on a prism?

- Ans**
- ✗ 1. Indigo
 - ✗ 2. Yellow
 - ✗ 3. Red
 - ✓ 4. Violet

Q.36 Simplify the given expression.

$$3 + 6 \times (5 + 4) \div 3 - 7$$

- Ans**
- ☒ 1. 11
 - ☒ 2. 15
 - ☒ 3. 14
 - ☒ 4. 16

Q.37 While subtracting -2 from $\frac{-3}{10}$, the resultant value is:

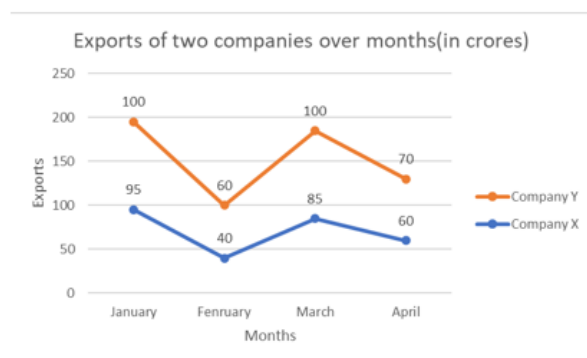
- Ans**
- ☒ 1. $1\frac{3}{5}$
 - ☒ 2. $1\frac{3}{10}$
 - ☒ 3. $1\frac{4}{5}$
 - ☒ 4. $1\frac{7}{10}$

Q.38 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

859, 768, 677, 586, 495, ?

- Ans**
- ☒ 1. 404
 - ☒ 2. 426
 - ☒ 3. 462
 - ☒ 4. 388

Q.39 Study the following chart and answer the question that follows.



What is the total exports by Company X and Y in months of January and March?

- Ans**
- ☒ 1. 385 crore
 - ☒ 2. 375 crore
 - ☒ 3. 380 crore
 - ☒ 4. 365 crore

Q.40 If a train travelling with a velocity of 20 m/s undergoes a uniform acceleration of 4 m/s^2 , what is the value of its velocity in 5 seconds?

- Ans**
- ☒ 1. 60 m/s
 - ☒ 2. 16 m/s
 - ☒ 3. 40 m/s
 - ☒ 4. 80 m/s

Q.41 Why did the Government of India remove the 'monument of national importance' status from the statue of John Nicholson?

- Ans**
- ☐ 1. The statue was found to be historically inaccurate.
 - ☐ 2. It was considered irrelevant to India's independence struggle.
 - ☒ 3. It was linked to British colonial legacy.
 - ☐ 4. The statue was in a deteriorating condition.

Q.42 Starting from rest, Raju attains a velocity of 24 m/s in a minute with his bicycle. The acceleration of the bicycle is:

- Ans**
- ☐ 1. 0 m/s^2
 - ☐ 2. 0.2 m/s^2
 - ☒ 3. 0.4 m/s^2
 - ☐ 4. 0.6 m/s^2

Q.43 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TX-VS-WY

UY-WT-XZ

- Ans**
- ☐ 1. FJ-HE-IL
 - ☒ 2. OS-QN-RT
 - ☐ 3. LP-NK-OR
 - ☐ 4. IM-KH-LO

Q.44 The term _____ refers to the densely packed kidney filtration unit.

- Ans**
- ☐ 1. Glomerulus
 - ☒ 2. Nephron
 - ☐ 3. Capillary
 - ☐ 4. Neurone

Q.45 In a certain code language, 'WIFE' is coded as '1852' and 'FIRE' is coded as '7258'. What is the code for 'R' in the given code language?

- Ans**
- ☐ 1. 8
 - ☐ 2. 2
 - ☐ 3. 
 - ☒ 4. 7

Q.46 An organism simply splits into two equal halves during cell division. What is it known as?

- Ans**
- ☐ 1. Regeneration
 - ☐ 2. Budding
 - ☒ 3. Binary fission
 - ☐ 4. Spore formation

Q.47 Many nerve fibres are bound together by which tissue and make up a nerve?

- Ans**
- ☐ 1. Vascular tissue
 - ☐ 2. Meristematic tissue
 - ☒ 3. Connective tissue
 - ☐ 4. Epithelial tissue

Q.48 In a certain code language, 'over the top' is written as 'ak ot yh' and 'the rock is' is coded as 'ot gb tk'. How is 'the' coded in the given language?

- Ans**
- ☒ 1. mr
 - ☒ 2. ot
 - ☒ 3. sy
 - ☒ 4. ql

Q.49 Who took the oath as the new Chief Minister of Haryana in the Assembly Election 2024?

- Ans**
- ☒ 1. Shri Manohar Lal Khattar
 - ☒ 2. Shri Nayab Singh Saini
 - ☒ 3. Shri Dushyant Chautala
 - ☒ 4. Shri Om Prakash Chautala

Q.50 Which of the following is/are the example/s of double displacement reaction?

- (1) $\text{C (s)} + \text{O}_2 \text{ (g)} \rightarrow \text{CO}_2 \text{ (g)}$
- (2) $\text{Na}_2\text{SO}_4 \text{ (aq)} + \text{BaCl}_2 \text{ (aq)} \rightarrow \text{BaSO}_4 \text{ (s)} + 2\text{NaCl (aq)}$
- (3) $\text{Pb (s)} + \text{CuCl}_2 \text{ (aq)} \rightarrow \text{PbCl}_2 \text{ (aq)} + \text{Cu (s)}$
- (4) $\text{CaCO}_3 \text{ (s)} \rightarrow \text{CaO (s)} + \text{CO}_2 \text{ (g)}$

- Ans**
- ☒ 1. Only 2
 - ☒ 2. 2 and 3 only
 - ☒ 3. 1, 2 and 3 only
 - ☒ 4. 1 and 4 only

Q.51 Simplify the given expression.

$$5 + 9 - 9 \div 3 \times 4$$

- Ans**
- ☒ 1. 6
 - ☒ 2. 5
 - ☒ 3. 2
 - ☒ 4. 3

Q.52 The average of two numbers is M. If one number is N, then the other number is:

- Ans**
- ☒ 1. 2N
 - ☒ 2. 2M
 - ☒ 3. M - N
 - ☒ 4. 2M - N

Q.53 Cotton clothes are preferred in summer season because:

- Ans**
- ☒ 1. cotton is unable to expose sweat to the atmosphere for evaporation
 - ☒ 2. cotton is a bad absorber of water and exposes sweat to atmosphere for evaporation
 - ☒ 3. cotton is a good absorber of water and exposes sweat to atmosphere for evaporation
 - ☒ 4. cotton does not absorb sweat

Q.54 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 72 :: 22 : Y

- Ans**
- ✓ 1. X = 12, Y = 132
 - ✗ 2. X = 18, Y = 132
 - ✗ 3. X = 18, Y = 96
 - ✗ 4. X = 12, Y = 110

Q.55 Electromagnetic Induction was discovered by:

- Ans**
- ✗ 1. 
 - ✓ 2. Faraday
 - ✗ 3. Newton
 - ✗ 4. Einstein

Q.56 Which of the following is a property of liquids?

- Ans**
- ✗ 1. Liquids have fixed shape.
 - ✗ 2. Liquids have no fixed volume.
 - ✗ 3. Liquids are rigid.
 - ✓ 4. The rate of diffusion of liquids is higher than that of solids.

Q.57 Chami Murmu, an Indian environmental activist, was awarded the Padma Shri in 2024 for her work in founding the ____, which has planted over 3 million trees in Jharkhand.

- Ans**
- ✓ 1. Sahayogi Mahila Bagraisai
 - ✗ 2. Prakriti Raksha Abhiyan
 - ✗ 3. Van Mahotsav Foundation
 - ✗ 4. Green India Mission

Q.58 Which of the following are small-sized in animal cells while in plant cells these are very large in size?

- Ans**
- ✗ 1. Lysosomes
 - ✗ 2. Plastids
 - ✗ 3. Golgi apparatus
 - ✓ 4. 

Q.59 The Lunar Polar Exploration Mission (LUPEX) is a planned collaborative lunar mission involving which two space agencies?

- Ans**
- ✓ 1. ISRO and JAXA
 - ✗ 2. JAXA and CNSA
 - ✗ 3. ISRO and NASA
 - ✗ 4. NASA and ESA

Q.60 One atmosphere is equal to _____.

- Ans**
- ☐ 1. 1.01×10^{-5} Pa
 - ☐ 2. 1.01×10^6 Pa
 - ☒ 3. 1.01×10^5 Pa
 - ☐ 4. 1.01×10^{-6} Pa

Q.61 Select the INCORRECT pair.

- Ans**
- ☒ 1. Coal – digested in our body
 - ☐ 2. Plastic – does not breakdown by the action of bacteria
 - ☐ 3. Rice – digested in our body
 - ☐ 4. Protein – digested in our body

Q.62 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No car is a bus.

No bus is a plane.

Conclusions:

(I) No bus is a car.

(II) No car is a plane.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Only conclusion I follows
 - ☐ 4. Neither conclusion I nor II follows

Q.63 Which of the following points always lie(s) on the principal axis of a spherical mirror?

- i) Principal Focus
- ii) Point of incidence
- iii) Pole

- Ans**
- ☐ 1. Only (i)
 - ☐ 2. Both (ii) and (iii)
 - ☐ 3. Only (iii)
 - ☒ 4. Both (i) and (iii)

Q.64 The value of $\frac{11}{18} + \frac{7}{-27}$ is:

- Ans
- ☐ 1. $\frac{-19}{27}$
 - ☒ 2. $\frac{19}{54}$
 - ☐ 3. $\frac{-19}{54}$
 - ☐ 4. $\frac{19}{27}$

Q.65 C_2H_2 , C_2H_4 , and C_2H_6 belong to which group of hydrocarbons?

- Ans
- ☒ 1. Alkyne, alkene, and alkane hydrocarbons, respectively
 - ☐ 2. Alkane, alkene, and alkyne hydrocarbons, respectively
 - ☐ 3. Alkene, alkyne, and alkane hydrocarbons, respectively
 - ☐ 4. Alkane, alkyne, and alkene hydrocarbons, respectively

Q.66 Modes of reproduction in various organisms depend on the _____.

- Ans
- ☒ 1. body design of the organisms
 - ☐ 2. nervous system of the organisms
 - ☐ 3. respiratory pigments of the organisms
 - ☐ 4. nutritive strategy of the organisms

Q.67 Which of the following expressions gives the correct formula for mass by mass percentage of a solution?

- Ans
- ☐ 1. $((\text{Volume of solute})/(\text{Mass of solution})) \times 100$
 - ☐ 2. $((\text{Mass of solvent})/(\text{Mass of solution})) \times 100$
 - ☒ 3. $((\text{Mass of solute})/(\text{Mass of solution})) \times 100$
 - ☐ 4. $((\text{Mass of solute})/(\text{Volume of solution})) \times 100$

Q.68 Which of the following terms defines the ability of metals to be drawn into thin wires?

- Ans
- ☐ 1. Malleability
 - ☒ 2. Ductility
 - ☐ 3. Neither malleability nor ductility
 - ☐ 4. Both malleability and ductility

Q.69 Select the INCORRECT statement from the following options.

- Ans
- ☒ 1. The kinetic energy is the energy possessed by an object due to its position.
 - ☐ 2. The kinetic energy of an object increases with the increase of its mass.
 - ☐ 3. The kinetic energy is the energy possessed by an object due to its motion.
 - ☐ 4. The kinetic energy of an object increases with the increase of its velocity.

Q.70 When the selling price of a TV is ₹18,700, the shopkeeper incurs a loss of 15%. What should be the selling price of that TV so as to gain 15%?

- Ans**
- ☐ 1. ₹43,200
 - ☐ 2. ₹34,200
 - ☐ 3. ₹19,800
 - ☒ 4. ₹25,300

Q.71 If the mode of a data exceeds its mean by 16.2, then the mode exceeds the median by _____. (Use empirical formula to find the answer.)

- Ans**
- ☒ 1. 10.8
 - ☐ 2. 12.4
 - ☐ 3. 10.2
 - ☐ 4. 8.25

Q.72 The focal length of a spherical mirror is 12 cm, then the radius of curvature of this mirror will be:

- Ans**
- ☒ 1. 24cm
 - ☐ 2. 3cm
 - ☐ 3. 2cm
 - ☐ 4. 6cm

Q.73 Seven boxes, A, B, C, D, E, F and G, are kept one over the other but not necessarily in the same order. Only C is kept above D. Only two boxes are kept between D and F. Only G is kept below A. B is not kept immediately above F. Which box is kept fourth from the top ?

- Ans**
- ☒ 1. E
 - ☐ 2. B
 - ☐ 3. H
 - ☐ 4. D

Q.74 The value of $\tan A + \frac{1}{\tan A}$ is:

- Ans**
- ☐ 1. $\operatorname{cosec} A \sin A$
 - ☒ 2. $\operatorname{cosec} A \sec A$
 - ☐ 3. $\operatorname{cosec} A \cot A$
 - ☐ 4. $\cos A \sec A$

Q.75 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement: The bee population in the region has been steadily declining due to the widespread use of pesticides in agriculture.

Courses of Action:

- I. Introduce regulations that restrict the use of certain pesticides during peak pollination seasons.
- II. Establish urban beekeeping programmes to artificially boost the bee population and pollination efforts.

- Ans**
- ☐ 1. Only I follows
 - ☐ 2. Only II follows
 - ☐ 3. Neither I nor II follows
 - ☒ 4. Both I and II follow

Q.76 At what rate (in percentage) per annum on simple interest will a sum of money double itself in 8 years?

- Ans**
- ✓ 1. 12.5%
 - ✗ 2. 5.6%
 - ✗ 3. 6.25%
 - ✗ 4. 2.5%

Q.77 If an object with a mass of 0.1 kg moves with a uniform velocity of 2ms^{-1} , its kinetic energy is _____.

- Ans**
- ✗ 1. 0.4 joule
 - ✗ 2. 0.1 joule
 - ✓ 3. 0.2 joule
 - ✗ 4. 0.05 joule

Q.78 To move an object on a horizontal table, one needs to apply:

- Ans**
- ✗ 1. balanced force
 - ✗ 2. an equal amount of perpendicular forces on the object in both upward and downward directions
 - ✓ 3. unbalanced force
 - ✗ 4. only a single force perpendicular to the object

Q.79 What is the full form of CNG and LPG, respectively?

- Ans**
- ✗ 1. Compressed Natural Gas and Liquefied Pressured Gas
 - ✗ 2. Compressed Neutral Gas and Liquefied Pressured Gas
 - ✗ 3. Compressed Neutral Gas and Liquefied Petroleum Gas
 - ✓ 4. Compressed Natural Gas and Liquefied Petroleum Gas

Q.80 Consider the following statements about a mixture and determine which of the statements is/are correct.

1. A mixture has a variable composition.
2. In compounds, the composition of each new substance is always fixed.
3. A mixture shows the properties of the constituent substances.

- Ans**
- ✗ 1. Only 2 and 3
 - ✗ 2. Only 1 and 2
 - ✓ 3. 1, 2 and 3
 - ✗ 4. Only 1

Q.81 $(x - y)(x + y)(x^2 + y^2)(x^4 + y^4)$ is equal to :

- Ans**
- ✗ 1. $x^8 + y^8$
 - ✗ 2. $x^{16} + y^{16}$
 - ✗ 3. $x^{16} - y^{16}$
 - ✓ 4. $x^8 - y^8$

Q.82 As of October 2024, India is the home to ____ UNESCO World Heritage Sites.

- Ans**
- ☐ 1. 33
 - ☐ 2. 63
 - ☐ 3. 53
 - ☒ 4. 43

Q.83 A retailer permits a trade discount of 15%, followed by a cash discount of 20%, on an article. The net percentage of discount is:

- Ans**
- ☐ 1. 34%
 - ☐ 2. 31%
 - ☐ 3. 33%
 - ☒ 4. 32%

Q.84 Find the fourth proportional of 15, 25 and 12.

- Ans**
- ☐ 1. 15
 - ☐ 2. 30
 - ☐ 3. 25
 - ☒ 4. 20

Q.85 An object weighs 60 N when measured on the Earth. What would be its weight when measured on the moon?
(Given, acceleration due to gravity (g) of the moon is $\frac{1}{6}$ th of the g of the earth)

- Ans**
- ☐ 1. 70 N
 - ☒ 2. 10 N
 - ☐ 3. 40 N
 - ☐ 4. 60 N

Q.86 The number of solutions to the pair of linear equations $5x - 3y = 7$ and $7x + 4y = 18$ is:

- Ans**
- ☒ 1. one
 - ☐ 2. none
 - ☐ 3. infinite
 - ☐ 4. three

Q.87 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All apples are mangoes.

Some mangoes are lemons.

Conclusions:

(I) At least some mangoes are apples.

(II) Some apples are lemons.

- Ans**
- ☐ 1. Only conclusion II follows
 - ☐ 2. Both conclusions I and II follow
 - ☐ 3. Neither conclusion I nor II follows
 - ☒ 4. Only conclusion I follows

Q.88 Out of an earning of ₹720, Rama spends 65%. How much does she save?

- Ans**
- ✓ 1. ₹252
 - ✗ 2. ₹390
 - ✗ 3. ₹350
 - ✗ 4. ₹316

Q.89 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GIN, JLQ, MOT, PRW, ?

- Ans**
- ✗ 1. ZUS
 - ✗ 2. SZU
 - ✗ 3. ZSU
 - ✓ 4. SUZ

Q.90 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. Only five people sit between B and L. Z sits to the immediate left of L. Only one person sits between Z and D. A sits at some place to the left of Y but at some place to the right of X. Who sits third from the left end of the row?

- Ans**
- ✗ 1. D
 - ✗ 2. X
 - ✗ 3. Y
 - ✓ 4. A

Q.91 In a certain code language,

$A + B$ means 'A is the wife of B',

$A - B$ means 'A is the brother of B',

$A \times B$ means 'A is the father of B',

and $A \div B$ means 'A is the sister of B'.

How is P related to T if ' $P + Q - R \times S \div T$ '?

- Ans**
- ✗ 1. Father's sister
 - ✓ 2. Father's brother's wife
 - ✗ 3. Mother's brother's wife
 - ✗ 4. Mother

Q.92 The sum of the squares of the sides of a rhombus is 1600 cm^2 . What is the perimeter of the rhombus?

- Ans**
- ✗ 1. 20 cm
 - ✗ 2. 40 cm
 - ✓ 3. 80 cm
 - ✗ 4. 60 cm

Q.93 As per the Hurun India rich list 2024, who replaced Reliance Industries chairman Mukesh Ambani?

- Ans**
- ✗ 1. Nikesh Arora
 - ✓ 2. Gautam Adani
 - ✗ 3. Nithin Kamath
 - ✗ 4. Jayshree Ullal

Q.94 Which of the following statements is/are correct related to transportation?

- (i) Arteries are the vessels which carry blood away from the heart to various organs of the body.
- (ii) The arteries have thin and elastic walls.
- (iii) Veins have valves that ensure that blood flows only in one direction.

Ans ✓ 1. Only (i) and (iii)

✗ 2. Only (i) and (ii)

✗ 3. (i), (ii) and (iii)

✗ 4. Only (i)

Q.95 If 'A' stands for '−', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '÷', what will come in place of the question mark '?' in the following equation?

$$23 \text{ D } 18 \text{ C } 3 \text{ B } 5 \text{ A } 17 = ?$$

Ans ✗ 1. 46

✗ 2. 56

✓ 3. 36

✗ 4. 26

Q.96 Which of the following statements is correct related to male reproductive system?

Ans ✗ 1. Sperm formation requires higher temperature than the normal body temperature.

✗ 2. Testes are located in the abdominal cavity.

✓ 3. Testes secrete testosterone hormone.

✗ 4. Formation of sperm takes place in seminal vessel.

Q.97 If the diameter and the height of a cylinder are 10 cm and 10.5 cm, respectively, then using $\pi = \frac{22}{7}$, find the volume of the cylinder.

Ans ✗ 1. 985 cm^3

✗ 2. 785 cm^3

✗ 3. 888 cm^3

✓ 4. 825 cm^3

Q.98 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$$X : 87 :: 14 : Y$$

Ans ✗ 1. $X = 8, Y = 154$

✗ 2. $X = 9, Y = 153$

✓ 3. $X = 8, Y = 153$

✗ 4. $X = 9, Y = 155$

Q.99 Which of the following transports food, carbon dioxide and nitrogenous wastes in a dissolved form?

- Ans**
- ✓ 1. Plasma
 - ✗ 2. Blood platelets
 - ✗ 3. Lymph
 - ✗ 4. Red blood corpuscles

Q.100 Silver ornaments become black after some time because silver reacts with _____ present in the air.

- Ans**
- ✗ 1. nitrogen
 - ✗ 2. carbon dioxide
 - ✓ 3. sulphur
 - ✗ 4. oxygen

2024/12/26-17:56:36



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Siliguri
Test Date	23/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following statements is NOT correct?

Ans ☒ 1. The speed of light in different media is different.

☒ 2. The speed of light in the given medium is different for different colours,

☒ 3. The angle of incidence and refraction are equal.

☒ 4.

The incident ray, refracted ray and normal to the surface at incidence lie in the same plane.

Q.2 What similarities do plastids share with mitochondria?

Ans ☒ 1. Both are present only in plant cells.

☒ 2. Both contain chlorophyll.

☒ 3. Both produce ATPs.

☒ 4. Both contain their own DNA and ribosomes.

Q.3 The Readjustment of Representation of Scheduled Tribes in Assembly Constituencies of the State of Goa Bill, 2024, was introduced in the Lok Sabha on _____.

Ans ☒ 1. 15 September 2024

☒ 2. 8 August 2024

☒ 3. 5 October 2024

☒ 4. 5 August 2024

Q.4 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some shirts are pants.

Some pants are coats.

Conclusions:

(I) Some pants are not shirts.

(II) Some shirts are coats.

- Ans**
- ☒ 1. Both conclusions I and II follow
 - ☒ 2. Neither conclusion I nor II follows
 - ☐ 3. Only conclusion I follows
 - ☐ 4. Only conclusion II follows

Q.5 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) # 1 * £ 5 3 2 9 + % 8 4 6 @ \$ 7 & Ω (Right)

How many such symbols are there, each of which is immediately preceded by a number and also immediately followed by another symbol?

- Ans**
- ☒ 1. 4
 - ☐ 2. 5
 - ☐ 3. 3
 - ☐ 4. 2

Q.6 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JTQ, HRS, FPU, DNW, ?

- Ans**
- ☐ 1. ZAL
 - ☒ 2. BLY
 - ☐ 3. ALZ
 - ☐ 4. BMZ

Q.7 A spherical mirror diverges a beam of light, which is incident on it. Which of the following statement(s) about the mirror is/are true?

i) The mirror used is convex.

ii) The mirror has positive focal length.

iii) The image formed by this mirror can be seen on a screen.

- Ans**
- ☐ 1. Only (i)
 - ☐ 2. Both (ii) and (iii)
 - ☐ 3. Only (iii)
 - ☒ 4. Both (i) and (ii)

Q.8 The area (in cm^2) of an equilateral triangle whose height is 6 cm, is:

- Ans**
- ☐ 1. $\frac{3\sqrt{3}}{2}$
 - ☐ 2. $6\sqrt{3}$
 - ☒ 3. $12\sqrt{3}$
 - ☐ 4. $\frac{9\sqrt{3}}{4}$

Q.9 The ratio of milk to water in 10 litres of a mixture is 3 : 2. The quantity of water in the mixture is:

- Ans**
- ☐ 1. 6 litres
 - ☒ 2. 4 litres
 - ☐ 3. 5 litres
 - ☐ 4. 10 litres

Q.10 In a situation where we are injured and start bleeding, the bleeding could lead to a loss of pressure that could reduce the efficiency of the pumping system. To avoid this, which cells mainly help to clot blood at the injury point?

- Ans**
- ☐ 1. Lymph
 - ☐ 2. White blood corpuscles
 - ☒ 3. Blood platelets
 - ☐ 4. Red blood corpuscles

Q.11 Four sandstone replicas of the iconic Konark wheels from the Konark Temple have been installed at (the) ____.

- Ans**
- ☐ 1. India Gate
 - ☒ 2. Rashtrapati Bhavan's Cultural Centre and Amrit Udyan
 - ☐ 3. Red Fort
 - ☐ 4. Qutub Minar

Q.12 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 9 + Ω 6 £ * \$ 1 & 8 4 7 2 % 5 3 @ # (Right)

How many such numbers are there, each of which is immediately preceded by a symbol and also immediately followed by another number?

- Ans**
- ☐ 1. 1
 - ☐ 2. 0
 - ☐ 3. 3
 - ☒ 4. 2

Q.13 What sum will earn a simple interest of ₹1,056 in 3 years at 16% per year rate of interest?

- Ans**
- ☐ 1. ₹1,800
 - ☐ 2. ₹1,600
 - ☐ 3. ₹2,000
 - ☒ 4. ₹2,200

Q.14 Which of the following statements is correct about transport in plants?

Ans ☒ 1.

In herbs and shrubs, the distances over which transport systems have to operate are very large.

☒ 2.

The xylem transports products of photosynthesis from the leaves where they are synthesised to other parts of the plant.

☒ 3. Plants have low energy needs and use relatively slow transport systems.

☒ 4. The phloem moves water and minerals obtained from the soil.

Q.15 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ☒ 1. BGL

☒ 2. UZE

☒ 3. PUZ

☒ 4. KUP

Q.16 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

PU-RN-ST

SX-UQ-VW

Ans ☒ 1. QV-SO-TW

☒ 2. KP-MI-NO

☒ 3. EJ-GC-HK

☒ 4. HM-JF-KN

Q.17 Who among the following has been appointed as the new chief of BrahMos Aerospace (November 2024)?

Ans ☒ 1. Dr. Jaiteerth Raghavendra Joshi

☒ 2. Dr. Vinay Agarwal

☒ 3. Dr. Riaz Syed

☒ 4. Dr. Murali Nethi

Q.18 The value of $\frac{9}{-16} + \frac{-5}{-12}$ is:

Ans ☒ 1. $\frac{4}{28}$

☒ 2. $\frac{-7}{24}$

☒ 3. $\frac{-7}{48}$

☒ 4. $\frac{-4}{28}$

Q.19 Simplify the given expression.

$$20 + \{10 - 5 + (7 - 3)\}$$

Ans ☐ 1. 26

☐ 2. 28

☐ 3. 27

☒ 4. 29

Q.20 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of alternate interior angles. If $m\angle 1 = 75^\circ$, what is the measure of $\angle 2$?

Ans ☒ 1. 75°

☐ 2. 105°

☐ 3. 65°

☐ 4. 15°

Q.21 A policeman and a thief start from the same place and walk at the rate of 5 km/h and 5.5 km/h, respectively. How much time will they take to be 9.5 km apart, if they walk in the same direction?

Ans ☐ 1. 4 hrs 15 min

☐ 2. 2 hrs 55 min

☒ 3. 19 hrs

☐ 4. 17 hrs

Q.22 Under 'PM Vishwakarma Yojana' benefits 2024 a loan of ₹ _____ is given at 5% interest.

Ans ☐ 1. 2,00,000

☒ 2. 3,00,000

☐ 3. 4,00,000

☐ 4. 5,00,000

Q.23 Which hormone helps in development of the female sex organs and regulates the menstrual cycle?

Ans ☐ 1. Testosterone

☐ 2. Adrenaline

☐ 3. Thyroxin

☒ 4. Oestrogen

Q.24 A resistor whose value $R = 10 \Omega$ is connected to a 10-volt battery. What will be the power P and the amount of heat H generated in one minute?

Ans ☐ 1. $P = 100 \text{ W}, H = 6000 \text{ J}$

☒ 2. $P = 10 \text{ W}, H = 600 \text{ J}$

☐ 3. $P = 1 \text{ W}, H = 60 \text{ J}$

☐ 4. $P = 20 \text{ W}, H = 1200 \text{ J}$

Q.25 1.25% of ₹1,600 is:

Ans ☐ 1. ₹25

☒ 2. ₹20

☐ 3. ₹17.50

☐ 4. ₹5

Q.26 Which of the following statements is/are correct?

- (i) Suspension is a heterogeneous mixture.
- (ii) The particles of a suspension scatter a beam of light passing through it and make its path visible.
- (iii) The solute particles settle down when a suspension is left undisturbed, that is, a suspension is unstable.

Ans ✓ 1. i, ii and iii

✗ 2. Only i

✗ 3. Only ii and iii

✗ 4. Only i and ii

Q.27 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✓ 1. TWY

✗ 2. WZC

✗ 3. NQT

✗ 4. YBE

Q.28 What is the value of the radius of the earth?

Ans ✗ 1. 7400 km

✓ 2. 6400 km

✗ 3. 8400 km

✗ 4. 5400 km

Q.29 Ali, Bob, Carol, Dave, Elma and Frank are sitting around a circular table facing the centre. Ali sits second to the left of Bob. Carol sits third to the right of Bob. Dave sits to the immediate left of Carol. Elma sits to the immediate left of Bob.

How many people sit between Elma and Frank when counted from the right of Elma ?

Ans ✓ 1. One

✗ 2. Three

✗ 3. Two

✗ 4. Zero

Q.30 Which of the following changes is NOT specific to teenage?

Ans ✓ 1. Increase in height

✗ 2. Thick hair in armpits

✗ 3. Thinner hair on legs and arms

✗ 4. Increase in breast size

Q.31 If future shoot hidden in a germinating seed is called plumule, then future root of the germinating seed would be _____.

Ans ✓ 1. radicle

✗ 2. sepal

✗ 3. petal

✗ 4. cotyledon

Q.32 In a certain code language, 'PIER' is coded as '1524' and 'RILE' is coded as '5321'. What is the code for 'P' in the given code language?

- Ans**
- ☐ 1. 2
 - ☒ 2. 4
 - ☐ 3. 1
 - ☐ 4. 5

Q.33 How many numbers between 11 and 90 are divisible by 7?

- Ans**
- ☒ 1. 11
 - ☐ 2. 10
 - ☐ 3. 12
 - ☐ 4. 13

Q.34 Who has taken over as the 26th Director General of the Indian Coast Guard?

- Ans**
- ☐ 1. Rajendra Singh
 - ☐ 2. Radhakrishnan S
 - ☐ 3. KN Satyanand
 - ☒ 4. Paramesh Sivamani

Q.35 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 30 :: 12 : Y

- Ans**
- ☒ 1. X = 9, Y = 39
 - ☐ 2. X = 10, Y = 42
 - ☐ 3. X = 10, Y = 39
 - ☐ 4. X = 9, Y = 36

Q.36 The mean and mode of a set of data are 58.7 and 61.1, respectively. Find the median of the data, using the empirical formula.

- Ans**
- ☐ 1. 54.6
 - ☐ 2. 55.2
 - ☐ 3. 55.8
 - ☒ 4. 59.5

Q.37 The value of

$(1 + \cot^2 \theta)(1 + \cos \theta)(1 - \cos \theta) - (1 - \sin \theta)(1 + \sin \theta)(1 + \tan^2 \theta)$ is: (θ lies in first quadrant)

- Ans**
- ☒ 1. 0
 - ☐ 2. 4
 - ☐ 3. 2
 - ☐ 4. 1

Q.38 Solid CO_2 gets converted directly into gaseous state on decrease of pressure to:

- Ans**
- ☒ 1. 1 atmosphere
 - ☐ 2. 20 atmosphere
 - ☐ 3. 10 atmosphere
 - ☐ 4. 5 atmosphere

Q.39 Which of the following is INCORRECTLY matched related to the excretory system of humans?

- Ans**
- ☐ 1. Ureter – a pair
 - ☒ 2. Urethra – a pair
 - ☐ 3. Urinary bladder – unpaired
 - ☐ 4. Kidney – a pair

Q.40 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explains the event/observation/information given in the statement.

Statement - Even though Town B has a rich history and many ancient landmarks, it is not a popular tourist destination.

I. The town has poor public transportation and limited accommodation options.

II. Town B is located near a popular beach destination.

- Ans**
- ☐ 1. Neither I nor II is a possible reason
 - ☐ 2. Both I and II are possible reasons
 - ☒ 3. Only I is a possible reason
 - ☐ 4. Only II is a possible reason

Q.41 Mr. Saxena bought some pens at the rate of ₹150 per dozen. He sold them for ₹15 each. What is his profit/loss percentage?

- Ans**
- ☐ 1. 37.5% loss
 - ☐ 2. 18.5% profit
 - ☒ 3. 20% profit
 - ☐ 4. 28% loss

Q.42 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. Only two people sit between F and K when counted from the right of F. Only two people sit between K and C. Only three people sit between F and D. B sits to the immediate left of L.

Who sits third to the left of E?

- Ans**
- ☐ 1. F
 - ☒ 2. L
 - ☐ 3. B
 - ☐ 4. K

Q.43 Find the correct number of atoms for a glucose molecule.

- Ans**
- ☐ 1. 12
 - ☒ 2. 24
 - ☐ 3. 18
 - ☐ 4. 6

Q.44 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$25 + 15 - 9 \div 10 \times 5 = ?$$

- Ans**
- ✓ 1. 28
 - ✗ 2. 55
 - ✗ 3. 82
 - ✗ 4. -22

Q.45 If the mode of the following data is 6, then find the value of k.

2, 4, 6, 7, 5, 6, 10, 6, 7, 2k + 1, 9, 7, 13

- Ans**
- ✓ 1. 2.5
 - ✗ 2. 2
 - ✗ 3. 3
 - ✗ 4. 3.5

Q.46 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 83 :: 17 : Y

- Ans**
- ✗ 1. X = 12, Y = 119
 - ✓ 2. X = 12, Y = 118
 - ✗ 3. X = 11, Y = 119
 - ✗ 4. X = 11, Y = 118

Q.47 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DBL, IEN, NHP, SKR, ?

- Ans**
- ✓ 1. XNT
 - ✗ 2. YMT
 - ✗ 3. YNT
 - ✗ 4. SMX

Q.48 A solution contains 20 g of common salt in 280 g of water. What is the concentration in terms of mass by mass percentage of the solution?

- Ans**
- ✓ 1. 6.66%
 - ✗ 2. 0.66%
 - ✗ 3. 11.1%
 - ✗ 4. 66.6%

Q.49 What will be the amount after 1 year if a sum of ₹7,500 is invested at 8% compound interest per annum, compounded half-yearly?

- Ans**
- ✓ 1. ₹8,112
 - ✗ 2. ₹8,220
 - ✗ 3. ₹8,300
 - ✗ 4. ₹8,140

Q.50 Face cream belongs to which type of colloid form?

- Ans**
- ✓ 1. Emulsion
 - ✗ 2. Foam
 - ✗ 3. Solid
 - ✗ 4. Gel

Q.51 Which of the following is absent in cells of meristematic tissue?

- Ans**
- ✓ 1. Vacuoles
 - ✗ 2. Cytoplasm
 - ✗ 3. Nuclei
 - ✗ 4. Cell walls

Q.52 If A means +, B means −, C means ×, D means ÷, then what will come in place of the question mark (?) in the following equation?

$$14 \text{ D } 2 \text{ A } 10 \text{ B } 3 \text{ C } 5 = ?$$

- Ans**
- ✗ 1. 1
 - ✓ 2. 2
 - ✗ 3. 0
 - ✗ 4. 3

Q.53 A constant force F acts on a box of mass 10 kg for a duration of 2 s. It increases the object's velocity from 6 m/s to 10 m/s. The magnitude of the applied force F is:

- Ans**
- ✗ 1. 40 N
 - ✗ 2. 25 N
 - ✗ 3. 50 N
 - ✓ 4. 20 N

Q.54 The oesophagus and the lining of the mouth are also covered with:

- Ans**
- ✓ 1. squamous epithelium
 - ✗ 2. cuboidal epithelium
 - ✗ 3. ciliated columnar epithelium
 - ✗ 4. glandular epithelium

Q.55 Decomposition of limestone to quick lime and carbon dioxide is an example of which of the following types of reaction?

- Ans**
- ✗ 1. Photochemical decomposition
 - ✗ 2. Oxidation reaction
 - ✗ 3. Reduction reaction
 - ✓ 4. Thermal decomposition

Q.56 A cistern has two taps attached to it. Tap B can empty the cistern in 45 minutes. But Tap A can fill the cistern in just 30 minutes. Rohit started both taps unknowingly but realised his mistake after 30 minutes. He immediately closed Tap B. Now after this, in how much time will the cistern be filled?

- Ans**
- ✗ 1. 30 min
 - ✓ 2. 20 min
 - ✗ 3. 15 min
 - ✗ 4. 45 min

Q.57 Which of the following pigments is present in the red blood corpuscles of human beings?

Ans ✓ 1. Haemoglobin

✗ 2. Melanin

✗ 3. Xanthophyll

✗ 4. Chlorophyll

Q.58 An electric bulb is connected to a 200 V generator. The current drawn by the bulb is 0.1 A. What is the power of the bulb?

Ans ✗ 1. 200 W

✗ 2. 2 W

✗ 3. 10 W

✓ 4. 20 W

Q.59 Which statement is correct for unsaturated hydrocarbons?

Ans ✗ 1. Alkane, alkenes and alkynes are unsaturated hydrocarbons.

✗ 2. Methane, ethane and butane are unsaturated hydrocarbons.

✓ 3. Alkenes and alkynes are unsaturated hydrocarbons.

✗ 4. Cyclo pentane and hexane are unsaturated hydrocarbons.

Q.60 Which of the following statements is/are correct about reduction?

a) Loss of oxygen

b) Gain of hydrogen

c) Gain of oxygen

d) Loss of hydrogen

Ans ✗ 1. Only b and c

✗ 2. Only d

✗ 3. Only a and d

✓ 4. Only a and b

Q.61 Which of the following would help a few variants of bacteria in a population living in temperate waters to survive and grow further, if the water temperature were to be increased by global warming?

Ans ✓ 1. Resistant to heat

✗ 2. Resistant to water

✗ 3. Resistant to wind pressure

✗ 4. Resistant to cold waves

Q.62 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All laptops are mobiles.

Some mobiles are televisions.

All televisions are radios.

Conclusions:

(I) Some radios are televisions.

(II) All televisions are mobiles.

- Ans** ☒ 1. Only conclusion (I) follows.
☐ 2. Neither conclusion (I) nor (II) follows.
☐ 3. Only conclusion (II) follows.
☐ 4. Both conclusions (I) and (II) follow.

Q.63 Radhika's teacher is 60 years old. He is 20 years older than twice Radhika's age. Radhika's age is:

- Ans** ☒ 1. 20 years
☐ 2. 15 years
☐ 3. 30 years
☐ 4. 25 years

Q.64 What is the overall Sustainable Development Goal (SDG) score for India for the year 2023-24 as reported by NITI Aayog?

- Ans** ☐ 1. 80
☒ 2. 71
☐ 3. 65
☐ 4. 75

Q.65 What kind of energy is acquired by a stretched rubber band?

- Ans** ☒ 1. Potential energy
☐ 2. Thermal energy
☐ 3. Kinetic energy
☐ 4. Light energy

Q.66 What is the initial speed of any object if it is dropped from a height of 50 m?

- Ans** ☒ 1. 0
☐ 2. 25 m/s
☐ 3. 20 m/s
☐ 4. 50 m/s

Q.67 When we eat something we like, our mouth waters by a fluid called saliva. In this situation, which enzymes break starch into simple sugar?

- Ans** ☐ 1. Pancreatic enzymes
☐ 2. Trypsin enzymes
☒ 3. Amylase enzymes
☐ 4. Pepsin enzymes

Q.68 Simplify the following expression:

$$\frac{5.32 \times 5.32 - 3.64 \times 3.64}{1.68}$$

- Ans
- ✓ 1. 8.96
 - ✗ 2. 8.99
 - ✗ 3. 8.86
 - ✗ 4. 8.94

Q.69 Vaibhav ranked 7th from the top and 32nd from the bottom in his class. How many students are there in the class?

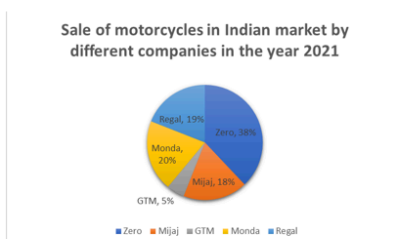
- Ans
- ✗ 1. 36
 - ✓ 2. 38
 - ✗ 3. 39
 - ✗ 4. 37

Q.70 Which of the following substances experiences the least change in shape when subjected to a change in pressure?

- Ans
- ✓ 1. Solid
 - ✗ 2. Liquid
 - ✗ 3. Gas
 - ✗ 4. Plasma

Q.71 Study the following pie-chart and answer the question that follows.

The following pie-chart shows the breakup of the percentage sale of motorcycles by different companies in India the year 2021.



If the total motorcycles sold in India in the year 2021 was 25,00,000, then what was the number of motorcycles sold by GTM in India in the year 2021?

- Ans
- ✓ 1. 1,25,000
 - ✗ 2. 1,50,000
 - ✗ 3. 2,00,000
 - ✗ 4. 1,75,000

Q.72 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is T related to W if 'T ÷ U x V + W - X'?

- Ans
- ☐ 1. Father's brother
 - ☒ 2. Brother
 - ☐ 3. Father's father
 - ☐ 4. Father

Q.73 Which gas is given out when metals react with dilute hydrochloric acid?

- Ans
- ☐ 1. Nitrogen
 - ☐ 2. Oxygen
 - ☐ 3. Chlorine
 - ☒ 4. Hydrogen

Q.74 The sum of the two numbers is 58 and one of them exceeds the other by 18. Find the greater number.

- Ans
- ☐ 1. 30
 - ☐ 2. 40
 - ☐ 3. 36
 - ☒ 4. 38

Q.75 Which metals produce hydrogen gas when treated with very dilute nitric acid?

- Ans
- ☐ 1. Magnesium (Mg) and copper (Cu)
 - ☒ 2. Magnesium (Mg) and manganese (Mn)
 - ☐ 3. Manganese (Mn) and cobalt (Co)
 - ☐ 4. Copper (Cu) and cobalt (Co)

Q.76 Pipes A and B can fill a tank for 8 hours and 10 hours, respectively, and pipe C can empty the full tank in 12 hours. All three pipes are opened together, but pipe A is closed after 4 hours. In how many hours will the remaining part of tank be filled?

- Ans
- ☐ 1. 30
 - ☐ 2. 24
 - ☒ 3. 26
 - ☐ 4. 22

Q.77 What determines the colour of scattered light in the Tyndall effect?

- Ans
- ☐ 1. The angle of incidence of the incoming light.
 - ☐ 2. The angle of refraction of the emerging light.
 - ☐ 3. The distance between the source of light and the scattering particles.
 - ☒ 4. The size of the scattering particles.

Q.78 Which law states that the current flowing through a conductor is directly proportional to the voltage applied across it, provided the temperature and other physical conditions remain constant?

- Ans**
- ✓ 1. Ohm's law
 - ✗ 2. Joule's law
 - ✗ 3. Faraday's law
 - ✗ 4. Newton's law

Q.79 _____ bagged Santosh Trophy title by beating Goa by 1-0 in the final of the 77th National Football Championship at the Golden Jubilee Stadium, on 9 March 2024.

- Ans**
- ✗ 1. Mizoram
 - ✗ 2. Kerala
 - ✗ 3. West Bengal
 - ✓ 4. Services

Q.80 The area of a square is 4096 sq cm. Find the ratio of the breadth and the length of a rectangle whose length is twice the side of the square and breadth is 24 cm less than the side of the square.

- Ans**
- ✓ 1. 5 : 16
 - ✗ 2. 18 : 5
 - ✗ 3. 7 : 16
 - ✗ 4. 5 : 32

Q.81 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

EA-GC-IK

HD-JF-LN

- Ans**
- ✓ 1. KG-MI-OQ
 - ✗ 2. LG-MI-OR
 - ✗ 3. KG-NI-OR
 - ✗ 4. LG-NI-OQ

Q.82 Ginny starts from point A and drives 7 km towards the North. She takes two simultaneous left turns and drives 3 km and 4 km, respectively. She then takes a right turn and drives 2 km. She takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees only unless specified.)

- Ans**
- ✗ 1. 3 km West
 - ✗ 2. 3 km East
 - ✗ 3. 4 km East
 - ✓ 4. 5 km East

Q.83 Which of the following is the correct formula for ethyne?

- Ans**
- ✗ 1. CH₄
 - ✗ 2. C₂H₆
 - ✓ 3. C₂H₂
 - ✗ 4. C₂H₄

Q.84 Which of the following sports personalities received the Padma Shri in 2024 for their contribution to sports?

- Ans**
- ☐ 1. Manika Batra
 - ☐ 2. Vinesh Phogat
 - ☒ 3. Joshna Chinappa
 - ☐ 4. PV Sindhu

Q.85 Vandita scored an overall average of 80% marks in five subjects taken together, viz. Hindi, Science, Maths, English and Sanskrit, wherein the maximum marks of each subject were 105. How many marks did Vandita score in Science if she scored 89 marks in Hindi, 92 marks in Sanskrit, 98 marks in Maths and 81 marks in English?

- Ans**
- ☐ 1. 65
 - ☒ 2. 60
 - ☐ 3. 75
 - ☐ 4. 70

Q.86 In an electric bulb, the electrical energy is converted into _____ energy.

- Ans**
- ☐ 1. Sound
 - ☐ 2. Wind
 - ☐ 3. Potential
 - ☒ 4. Light

Q.87 The force exerted by an object perpendicular to the surface is called:

- Ans**
- ☐ 1. buoyancy
 - ☐ 2. weight
 - ☒ 3. thrust
 - ☐ 4. pressure

Q.88 In its October 2024 meeting, the RBI Monetary Policy Meeting kept the ____ unchanged at 6.5%.

- Ans**
- ☐ 1. statutory liquidity ratio
 - ☒ 2. repo rate
 - ☐ 3. cash reserve ratio
 - ☐ 4. bank rate

Q.89 A student took iron nails and dipped them in solution 'X' for twenty minutes. After some time he noticed that the colour of the iron nails became brownish. Identify solution 'X' in which the nail was dipped.

- Ans**
- ☒ 1. Copper sulphate
 - ☐ 2. Zinc sulphate
 - ☐ 3. Iron sulphate
 - ☐ 4. Lead sulphate

Q.90 Manish bought an electronic gadget with a 25% discount on the MRP. He made a profit of ₹600 by selling it for ₹18,600. The marked price of the electronic gadget was:

- Ans**
- ☐ 1. ₹22,000
 - ☐ 2. ₹25,600
 - ☒ 3. ₹24,000
 - ☐ 4. ₹24,200

Q.91 According to the Statistical Appendix of the Economic Survey 2023-24, what was India's Infant Mortality Rate (IMR) in 2020?

- Ans**
- ☐ 1. 42 per 1000 live births
 - ☒ 2. 28 per 1000 live births
 - ☐ 3. 34 per 1000 live births
 - ☐ 4. 30 per 1000 live births

Q.92 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

10, 18, 38, 74, 150, ?

- Ans**
- ☒ 1. 298
 - ☐ 2. 
 - ☐ 3. 300
 - ☐ 4. 280

Q.93 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 1 6 6 2 4 9 3 5 3 7 1 8 5 2 7 8 1 8 4 5 1 5 7 6 9 2 9 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 3
 - ☐ 2. 2
 - ☐ 3. 4
 - ☒ 4. 5

Q.94 Two numbers are in the ratio 7 : 5. If their sum is 360, then the difference between them will be:

- Ans**
- ☐ 1. 90
 - ☒ 2. 60
 - ☐ 3. 80
 - ☐ 4. 70

Q.95 Select the INCORRECT statement related to tropism.

- Ans**
- ☐ 1. Hydrotropism – movement towards water
 - ☐ 2. Chemotropism – movement towards chemical
 - ☒ 3. Phototropism – movement towards water
 - ☐ 4. Geotropism – in response to the pull of earth or gravity

Q.96 The HCF of 2410 and 2700 is:

- Ans**
- ☐ 1. 5
 - ☐ 2. 1
 - ☐ 3. 2
 - ☒ 4. 10

Q.97 Rays of the Sun converge at a point of 30 cm in front of a concave mirror. Where should the object be placed so that the size of the image is equal to the size of the object?

- Ans**
- ☐ 1. Between 30 and 60 cm in front of the mirror
 - ☐ 2. 30 cm in front of the mirror
 - ☐ 3. More than 30 cm in front of the mirror
 - ☒ 4. 60 cm in front of the mirror

Q.98 Evaluate the given expression.

$$\left(\frac{1}{4}\right)^{(-1/2)}$$

- Ans**
- ☒ 1. 2
 - ☐ 2. $\sqrt{2}$
 - ☐ 3. $\frac{1}{16}$
 - ☐ 4. $\frac{1}{2}$

Q.99 Which of the following is INCORRECT about parenchyma?

- Ans**
- ☐ 1. In aquatic plants, large air cavities are present in parenchyma to help them float.
 - ☐ 2. It consists of relatively unspecialised cells with thin cell walls.
 - ☐ 3. The cells of parenchyma are living cells and are usually loosely arranged.
 - ☒ 4.

It allows the bending of various parts of a plant like tendrils and stems of climbers without breaking.

Q.100 In a certain code system, 'sparkling stars twinkle' is coded as 'lajv epvz apxv', and 'stars twinkle brightly' is coded as 'epvz rkpx apxv'. What is the code for 'brightly' in the given code language?

- Ans**
- ☐ 1. apxv
 - ☐ 2. lajv
 - ☒ 3. rkpx
 - ☐ 4. epvz

2024/12/26-20:10:50



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Bhagalpur
Test Date	24/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The image formed by a concave mirror is real, inverted and with the same size as the object. The position of the object is kept:

- Ans**
- ✓ 1. at the centre of curvature
 - ✗ 2. between the focus and the centre of curvature
 - ✗ 3. far away from the centre of curvature
 - ✗ 4. at the focus

Q.2 In human beings, air is taken into the body through the nostrils and from here the air passes through the throat and into the lungs. Which of the following ensures that the air-passage does NOT collapse in the throat?

- Ans**
- ✗ 1. Nostrils large hairs
 - ✗ 2. Nostrils large pores
 - ✓ 3. Rings of cartilage
 - ✗ 4. Size of mouth cavity

Q.3 The value of $36^2 \div 9^2 + 4^2$ is:

- Ans**
- ✗ 1. 49
 - ✗ 2. 36
 - ✓ 3. 32
 - ✗ 4. 25

Q.4 Uma swims in a 60 m long pool. She covers 120 m in one minute by swimming from one end to the other and back along the same straight path. The average velocity of Uma is:

- Ans**
- ✗ 1. 1 m/s
 - ✗ 2. 2 m/s
 - ✓ 3. 0 m/s
 - ✗ 4. 3 m/s

Q.5 Which of the following is the dispersed phase of butter?

Ans ☐ 1. Both solid and liquid

☒ 2. Only liquid

☐ 3. Only gas

☐ 4. Only solid

Q.6 Unit of pressure is:

Ans ☐ 1. Newton/meter

☐ 2. Angstrom

☒ 3. Pascal

☐ 4. Newton

Q.7 Which of the following options is correct in the relation between mass and inertia?

Ans ☐ 1. Inertia is inversely proportional to mass.

☐ 2. Inertia is independent of mass.

☒ 3. Inertia is proportional to mass.

☐ 4. The data provided here is not adequate to draw any conclusion.

Q.8 _____ broke the national record at the 2024 Portland Track Festival.

Ans ☐ 1. Jyoshna Sabar

☒ 2. Gulveer Singh

☐ 3. Muhammad Anas

☐ 4. Avinash Sable

Q.9 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 6 3 0 4 7 5 5 6 8 3 6 6 9 6 1 1 0 8 7 8 5 0 4 0 3 2 1 3 0 6 (Right)

What is the sum of the 12th digit from the left and the 2nd digit from the right?

Ans ☐ 1. 5

☒ 2. 6

☐ 3. 4

☐ 4. 7

Q.10 Which of the following holds for the parallel combination of resistors?

Ans ☐ 1. The total resistance is equal to the highest resistance.

☐ 2. The total resistance is equal to the smallest resistance.

☐ 3. The total resistance is always greater than the smallest resistance.

☒ 4. The total resistance is always less than the smallest resistance.

Q.11 The perimeter of a rhombus is 148 cm, and one of its diagonals is 24 cm. The area in cm² of the rhombus is:

Ans ☐ 1. 875

☐ 2. 700

☐ 3. 770

☒ 4. 840

Q.12 What will come in the place of '?' in the following equation, if '×' and '+' are interchanged and '-' and '÷' are interchanged?

$$12 \times 12 \div 12 - 12 + 15 = ?$$

Ans ☒ 1. 39

☒ 2. 9

☒ 3. 69

☒ 4. 99

Q.13 If 30% of a number exceeds 20% of it by 12, then the number is:

Ans ☒ 1. 120

☒ 2. 150

☒ 3. 200

☒ 4. 180

Q.14 In a certain code language, 'BEAR' is coded as '7912' and 'EARN' is coded as '1296'. What is the code for 'N' in the given code language?

Ans ☒ 1. 2

☒ 2. 9

☒ 3. 1

☒ 4. 6

Q.15 Plant cells have cell walls because _____.

Ans ☒ 1. they do not have cytoplasm

☒ 2. they are required for photosynthesis

☒ 3. they do not have proper genetic material

☒ 4. they defend plant cells from a variety of external effects

Q.16 When you look at the front side of a table spoon, an inverted image of yours is formed. The front side of table spoon works as a:

Ans ☒ 1. plane mirror

☒ 2. concave lens

☒ 3. convex mirror

☒ 4. concave mirror

Q.17 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only four boxes are kept between A and Z. Only B is kept above A. Only two boxes are kept between L and Y. C is kept immediately above X. Y is not kept immediately above C.

Which box is kept fourth from the top?

Ans ☒ 1. X

☒ 2. C

☒ 3. A

☒ 4. L

Q.18 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(2, 8, 32)

(5, 20, 80)

Ans ✗ 1. (9, 39, 144)

✗ 2. (9, 36, 124)

✓ 3. (9, 36, 144)

✗ 4. (9, 36, 142)

Q.19 Study the following table and answer the question.

The table depicts the number of Apples sold by shops A and B to males and females on Monday

Shops	Number of apples sold to males	Number of apples sold to females
A	16	26
B	64	73

What is the difference between the number of apples sold by shops A and B to females?

Ans ✓ 1. 47

✗ 2. 48

✗ 3. 50

✗ 4. 45

Q.20 The traffic lights at three different crossings turn red after every 30 sec, 45 sec and 60 sec, respectively. If they all turn red simultaneously at 8:30 a.m., then at what time will they again turn red simultaneously?

Ans ✗ 1. 8:38 a.m.

✗ 2. 8:34 a.m.

✓ 3. 8:33 a.m.

✗ 4. 8:35 a.m.

Q.21 Which of the following parts of the plant is used in vegetative propagation?

Ans ✗ 1. Root and flowers

✗ 2. Fruits and flowers

✓ 3. Leaves and stem

✗ 4. Fruits and leaves

Q.22 Which party formed the government in Odisha after the 2024 Assembly elections?

Ans ✓ 1. Bharatiya Janata Party

✗ 2. Indian National Congress

✗ 3. Aam Aadmi Party (AAP)

✗ 4. Janata Dal (United)

Q.23 An object of height 30 cm is placed in front of a concave lens and an image of height 10 cm is formed. The magnification of the lens is:

- Ans**
- ☐ 1. 20
 - ☒ 2. $\frac{1}{3}$
 - ☐ 3. 3
 - ☐ 4. -20

Q.24 Formation of the mixture is a _____ change whereas formation of a compound is a _____ change, respectively.

- Ans**
- ☐ 1. chemical, chemical
 - ☒ 2. physical, chemical
 - ☐ 3. chemical, physical
 - ☐ 4. physical, physical

Q.25 Which of the following statements about the principal focus of a spherical mirror is/are correct?

- (a) It always lies midway between the pole and the centre of curvature.
- (b) Its position depends on the size of the mirror.
- (c) It always lies at the centre of curvature.

- Ans**
- ☐ 1. (b) and (c)
 - ☒ 2. Only (a)
 - ☐ 3. Only (c)
 - ☐ 4. (a) and (b)

Q.26 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 7 0 6 0 6 7 7 2 7 6 1 5 0 1 9 2 9 2 2 6 5 9 2 4 0 0 7 7 3 8 (Right)

What is the sum of the 5th digit from the left and the 10th digit from the right?

- Ans**
- ☐ 1. 10
 - ☒ 2. 11
 - ☐ 3. 13
 - ☐ 4. 9

Q.27 Muscles present in our limbs move when we want them to and stop when we so decide. Such muscles are called:

- Ans**
- ☐ 1. unstriated muscles
 - ☐ 2. cardiac muscles
 - ☒ 3. voluntary muscles
 - ☐ 4. involuntary muscles

Q.28 Which of the following statements is/are correct regarding the effects of changes in pressure on the states of matter?

Statement I: Applying pressure and reducing temperature can liquefy gases.

Statement II: Solid carbon dioxide is stored under high pressure.

- Ans**
- ☒ 1. Both statements I and II are correct.
 - ☐ 2. Only statement II is correct.
 - ☐ 3. Only statement I is correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.29 The motion of a freely falling body is an example of a:

- Ans
- ☒ 1. uniformly accelerated motion
 - ☐ 2. non-uniformly accelerated motion
 - ☐ 3. uniform velocity motion
 - ☐ 4. uniform speed motion

Q.30 Which city of India was host of ITU's prestigious World Telecom Standardization Assembly (WTSA 2024)?

- Ans
- ☐ 1. Chandigarh
 - ☐ 2. Jaipur
 - ☐ 3. Kolkata
 - ☒ 4. New Delhi

Q.31 The Defence Budget for the Financial Year 2024-25 constitutes what percentage of the total Union Budget?

- Ans
- ☒ 1. 12.90%
 - ☐ 2. 10.5%
 - ☐ 3. 11.2%
 - ☐ 4. 14.8%

Q.32 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EGK, HJN, KMQ, NPT, ?

- Ans
- ☐ 1. QWS
 - ☐ 2. SQW
 - ☒ 3. QSW
 - ☐ 4. SWQ

Q.33 The following observations are arranged in ascending order.

29, 32, 48, 50, x , $2x + 3$, 72, 78, 84, 95

If the median is 63, then the value of x is:

- Ans
- ☐ 1. 51
 - ☒ 2. 41
 - ☐ 3. 62
 - ☐ 4. 63

Q.34 $\sec^2 A + (\operatorname{cosec}^2 A - 1) - (1 + \tan^2 A) + \cot^2 A =$ _____.

- Ans
- ☐ 1. $\sec^2 A$
 - ☐ 2. 1
 - ☐ 3. 0
 - ☒ 4. $2\cot^2 A$

Q.35 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. FIL
 - ☐ 2. BEH
 - ☐ 3. RUX
 - ☒ 4. CEG

Q.36 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

GL-IF-JM

JO-LI-MP

- Ans**
- ☐ 1. KP-MJ-NO
 - ☐ 2. LQ-NK-OP
 - ☐ 3. NS-PM-QR
 - ☒ 4. MR-OL-PS

Q.37 Which of the following endocrine glands secretes growth hormone?

- Ans**
- ☒ 1. Pituitary
 - ☐ 2. Adrenal
 - ☐ 3. Thyroid
 - ☐ 4. Pancreas

Q.38 Which of the following options should come in place of the question mark (?) in the given series?

7 20 59 176 ? 1580

- Ans**
- ☐ 1. 517
 - ☐ 2. 557
 - ☒ 3. 527
 - ☐ 4. 510

Q.39 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find D's share.

- Ans**
- ☐ 1. ₹480
 - ☐ 2. ₹240
 - ☒ 3. ₹360
 - ☐ 4. ₹160

Q.40 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

ID-LG-OQ

LG-OJ-RT

- Ans**
- ☐ 1. MI-QK-TV
 - ☐ 2. NI-QK-TU
 - ☒ 3. NI-QL-TV
 - ☐ 4. MI-QL-TU

Q.41 Testes are located outside the abdominal cavity in scrotum because sperm formation requires:

- Ans**
- ☐ 1. normal body temperature
 - ☐ 2. higher temperature than the normal body temperature
 - ☐ 3. higher body temperature
 - ☒ 4. lower temperature than the normal body temperature

Q.42 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. No one sits to the right of Y. Only three people sit between Y and C. Only two people sit between C and Z. B sits third to the left of X. L sits to the immediate right of X.

How many people sit between A and Z?

- Ans**
- ☐ 1. One
 - ☒ 2. Three
 - ☐ 3. Two
 - ☐ 4. Four

Q.43 In a certain code language,

'A + B' means 'A is the sister of B',

'A – B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is V related to T if 'S + T – U x V – W + X'?

- Ans**
- ☒ 1. Son
 - ☐ 2. Brother
 - ☐ 3. Son's son
 - ☐ 4. Father

Q.44 In which of the following life processes is the creation of a DNA copy, a basic event?

- Ans**
- ☐ 1. Excretion
 - ☐ 2. Respiration
 - ☒ 3. Reproduction
 - ☐ 4. Circulation

Q.45 In July 2024, the 46th session of the World Heritage Committee was held in which of the following locations?

- Ans**
- ☐ 1. Jaipur
 - ☐ 2. Indore
 - ☒ 3. New Delhi
 - ☐ 4. Bengaluru

Q.46 In a certain code language, 'travel know places' is coded as 'mh ca lu' and 'travel makes tourist' is coded as 'by ai ca'. What is the code for 'travel' in the given code language?

- Ans**
- ☐ 1. mh
 - ☐ 2. lu
 - ☐ 3. by
 - ☒ 4. ca

Q.47 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CAN, FDP, IGR, LJT, ?

- Ans**
- ☐ 1. LNV
 - ☐ 2. LMV
 - ☒ 3. OMV
 - ☐ 4. LNR

Q.48 If the price of milk is 15% more than that of water, then the price of water is approximately what percentage less than that of milk?

- Ans**
- ☐ 1. 7.5%
 - ☐ 2. 5%
 - ☐ 3. 10.50%
 - ☒ 4. 13.04%

Q.49 In which of the following organisms can individuals change sex, indicating that sex is NOT genetically determined?

- Ans**
- ☐ 1. Ostriches
 - ☐ 2. Lizards
 - ☐ 3. Frogs
 - ☒ 4. Snails

Q.50 The 15th edition of the annual art fair was held in _____, with over 100 exhibitors and an inaugural section on Design Initiatives.

- Ans**
- ☐ 1. Chennai
 - ☐ 2. Surat
 - ☐ 3. Kolkata
 - ☒ 4. New Delhi

Q.51 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. PT-OS
 - ☐ 2. JN-IM
 - ☐ 3. RV-QU
 - ☒ 4. MQ-LO

Q.52 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All legs are hands.

Some legs are ears.

Conclusions:

(I) Some hands are ears.

(II) Some ears are legs.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☐ 2. Only conclusion II follows
 - ☐ 3. Neither conclusion I nor II follows
 - ☒ 4. Both conclusions I and II follow

Q.53 Pipe R can empty a full tank in 30 hours. But two pipes P and Q can fill the tank in 15 hours and 10 hours, respectively. Ram unknowingly opened all three taps. After 2 hours Shyam realised it and closed Pipe R. Due to this mistake how much time more would it take to fill the tank?

- Ans**
- ☒ 1. 24 min
 - ☐ 2. 18 min
 - ☐ 3. 2 hours 15 min
 - ☐ 4. 1 hour 20 min

Q.54 Who chairs the Defence Acquisition Council (DAC)?

- Ans**
- ☐ 1. Prime Minister Narendra Modi
 - ☒ 2. Defence Minister Rajnath Singh
 - ☐ 3. National Security Advisor Ajit Doval
 - ☐ 4. President Droupadi Murmu

Q.55 If 'A' stands for '+', 'B' stands for '+', 'C' stands for '×' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$15 A 3 B 9 D 2 C 4 = ?$$

- Ans**
- ☐ 1. 2
 - ☐ 2. 11
 - ☒ 3. 6
 - ☐ 4. 8

Q.56 What was the theme of The Climate Conference 2024 held on 12 January 2024 in Mumbai, Maharashtra?

- Ans**
- ☐ 1. "Innovating for Sustainable India"
 - ☐ 2. "Towards a Greener Future: India's Roadmap"
 - ☒ 3. "Decoding the Green Transition for India"
 - ☐ 4. "Empowering India's Climate Action"

Q.57 Match the following columns I and II.

Column I	Column II
A. Placenta	i. Nutrition
B. Fallopian tube	ii. Fertilization
C. Uterus	iii. Implantation

Ans ✗ 1. A-ii, B-i, C-iii

✗ 2. A-i, B-iii, C-ii

✗ 3. A-iii, B-ii, C-i

✓ 4. A-i, B-ii, C-iii

Q.58 The product $(a + b)(a - b)(a^2 - ab + b^2)(a^2 + ab + b^2)$ is equal to :

Ans ✗ 1. $a^3 + b^3$

✓ 2. $a^6 - b^6$

✗ 3. $a^6 + b^6$

✗ 4. $a^3 - b^3$

Q.59 Select the INCORRECT pair related to digestive glands and their enzymes.

Ans ✓ 1. Salivary gland – trypsin

✗ 2. Liver – bile juice

✗ 3. Gastric gland – pepsin

✗ 4. Pancreas – pancreatic juice

Q.60 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 38 :: 9 : Y

Ans ✗ 1. X = 15, Y = 28

✗ 2. X = 14, Y = 30

✓ 3. X = 14, Y = 28

✗ 4. X = 15, Y = 48

Q.61 Inside a bar magnet, the direction of magnetic field lines is from its:

Ans ✗ 1. North pole to its South pole

✓ 2. South pole to its North pole

✗ 3. always perpendicular to the North pole

✗ 4. always perpendicular to the South pole

Q.62 In a common salt/sodium chloride (NaCl), ions of which element is positively charged and negatively charged, respectively?

- Ans**
- ☐ 1. Ions of both Na and Cl are positively charged.
 - ☐ 2. Cl ions are positively charged, and Na ions are negatively charged.
 - ☐ 3. Ions of both Na and Cl are negatively charged.
 - ☒ 4. Na ions are positively charged, and Cl ions are negatively charged.

Q.63 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. F sits second to the left of C. Only E sits between K and F. B sits third to the left of E. D is not an immediate neighbour of B. Who sits fourth to the right of L?

- Ans**
- ☐ 1. F
 - ☒ 2. D
 - ☐ 3. E
 - ☐ 4. C

Q.64 Which of the following is a unit of pressure?

- Ans**
- ☐ 1. Kelvin
 - ☒ 2. Pascal
 - ☐ 3. Cubic metre
 - ☐ 4. Newton

Q.65 The present ages of the two people are 46 years and 60 years, respectively. If after 'k' years, the ratio of their ages is 4:5, then the value of 'k' is:

- Ans**
- ☐ 1. 13
 - ☐ 2. 12
 - ☒ 3. 10
 - ☐ 4. 11

Q.66 Which of the following constant values given in the options is equal to the universal gravitational constant 'G'?

- Ans**
- ☐ 1. $9.1 \times 10^{-31} \text{ kg}$
 - ☐ 2. $1.6 \times 10^{-19} \text{ C}$
 - ☒ 3. $6.7 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}$
 - ☐ 4. 9.8 ms^{-2}

Q.67 The greatest natural number by which the product of three consecutive even natural numbers is always divisible is:

- Ans**
- ☐ 1. 24
 - ☐ 2. 96
 - ☒ 3. 48
 - ☐ 4. 16

Q.68 Who is the second Indian chess player to breach the 2800 ELO rating barrier in classical chess as on December 2024?

- Ans**
- ☐ 1. Gukesh D
 - ☐ 2. Pentala Harikrishna
 - ☐ 3. Praggnanandhaa Rameshbabu
 - ☒ 4. Arjun Erigaisi

Q.69 Evaluate the given expression.

$$\{15 \times 32 \div 2 \times 5\} \div 75$$

Ans ☒ 1. 12

☒ 2. 14

☒ 3. 16

☒ 4. 18

Q.70 Benji starts from Point A and drives 70 km towards South. He then takes a right turn, drives 20 km, turns right and drives 35 km. He then takes a left turn and drives 15 km. He takes a final right turn, drives 35 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

Ans ☒ 1. 30 km towards East

☒ 2. 20 km towards East

☒ 3. 15 km towards East

☒ 4. 35 km towards East

Q.71 The phenomenon of scattering of light by the colloidal particles gives rise to:

Ans ☒ 1. Tyndall effect

☒ 2. twinkling of stars

☒ 3. delay in sunset

☒ 4. rainbow

Q.72 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some doors are locks.

No lock is a key.

Conclusions:

(I) No door is a key.

(II) Some locks are doors.

Ans ☒ 1. Only conclusion II follows

☒ 2. Only conclusion I follows

☒ 3. Neither conclusion I nor II follows

☒ 4. Both conclusions I and II follow

Q.73 Which of the following is an example of reduction reaction?

Ans ☒ 1. Conversion of ethanol into acetic acid

☒ 2. Conversion of copper into copper oxide

☒ 3. Conversion of copper oxide into copper

☒ 4. Conversion of carbon into carbon dioxide

Q.74 The mean proportional of 25 and 36 is:

- Ans
- ☐ 1. 25
 - ☐ 2. 36
 - ☐ 3. 60
 - ☒ 4. 30

Q.75 Select the option that completes the given sentence correctly.

The pH scale is used to measure the level of _____ of a solution.

- Ans
- ☒ 1. acidity or basicity
 - ☐ 2. pollution
 - ☐ 3. density
 - ☐ 4. volume

Q.76 If glucose :: six-carbon molecule, then pyruvate :: _____.

- Ans
- ☐ 1. two-carbon molecule
 - ☒ 2. three-carbon molecule
 - ☐ 3. five-carbon molecule
 - ☐ 4. four-carbon molecule

Q.77 Ramesh has invested ₹1,232 at 6% p.a. simple interest in a bank. What amount will he get after 3 years?

- Ans
- ☐ 1. ₹1,448.76
 - ☒ 2. ₹1,453.76
 - ☐ 3. ₹1,485.80
 - ☐ 4. ₹1,416.80

Q.78 A gas can be liquefied by _____.

- Ans
- ☐ 1. high pressure and high temperature
 - ☒ 2. high pressure and low temperature
 - ☐ 3. low pressure and high temperature
 - ☐ 4. low pressure and low temperature

Q.79 A ball is dropped from the top of a tower. At the midpoint of the motion of the ball, the energy possessed by the ball is:

- Ans
- ☐ 1. Potential
 - ☒ 2. Both Potential and Kinetic
 - ☐ 3. Kinetic
 - ☐ 4. Sound

Q.80 The sum of the first five prime numbers is:

- Ans
- ☐ 1. 11
 - ☒ 2. 28
 - ☐ 3. 26
 - ☐ 4. 18

Q.81 Which of the following is a dominant trait in the experiments done by Mendel on garden pea?

- Ans**
- ☐ 1. Wrinkled seeds
 - ☒ 2. Round seeds
 - ☐ 3. Short plants
 - ☐ 4. Green seeds

Q.82 A shopkeeper offered successive discounts of 10% and 15% on an article with the marked price of ₹28,000. Find the selling price of the article.

- Ans**
- ☐ 1. ₹21,402
 - ☐ 2. ₹21,240
 - ☐ 3. ₹22,140
 - ☒ 4. ₹21,420

Q.83 Select the INCORRECT pair.

- Ans**
- ☒ 1. Kulhad – non-biodegradable
 - ☐ 2. Plastic glass – non-biodegradable
 - ☐ 3. Vegetable – biodegradable
 - ☐ 4. Paper cup – biodegradable

Q.84 Find the circumference of a circle that circumscribes a square of side 7 cm.

(Use $\pi = \frac{22}{7}$.)

- Ans**
- ☒ 1. $22\sqrt{2}$ cm
 - ☐ 2. 22 cm
 - ☐ 3. 44 cm
 - ☐ 4. $44\sqrt{2}$ cm

Q.85 The average of the first 10 natural numbers is:

- Ans**
- ☐ 1. 6
 - ☐ 2. 6.5
 - ☒ 3. 5.5
 - ☐ 4. 5

Q.86 Which of the following is an example of an ionic compound?

- Ans**
- ☐ 1. Turmeric
 - ☐ 2. Sugar
 - ☐ 3. Glucose
 - ☒ 4. Table salt

Q.87 Which of the following is correct about fertilisation in plants?

Ans ☒ 1.

The male germ-cell produced by the ovule fuses with the female gamete present in the pollen tube.

☒ 2.

The male germ-cell produced by pollen grain fuses with the female gamete present in the ovule.

☒ 3.

The male germ-cell produced by pollen grain fuses with the female gamete present in the stigma.

☒ 4.

The male germ-cell produced by the ovary fuses with the female gamete present in the ovule.

Q.88 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of interior angles on the same side of the transversal. If $m\angle 1 = 65^\circ$, what is the measure of $\angle 2$?

Ans ☒ 1. 115°

☒ 2. 65°

☒ 3. 145°

☒ 4. 95°

Q.89 The chemical reaction that carries hydrogenation of vegetable oils in the presence of Ni catalyst is called:

Ans ☒ 1. rearrangement reaction

☒ 2. elimination reaction

☒ 3. addition reaction

☒ 4. combustion reaction

Q.90 A, B, and C alone can do a piece of work in 9, 12 and 18 days, respectively. They all started the work together, but A left after 3 days. In how many days, was the total work completed?

Ans

☒ 1. $\frac{5}{2}$

☒ 2. 2

☒ 3. $\frac{9}{5}$

☒ 4. $\frac{24}{5}$

Q.91 According to the reactivity series, which chemical reaction is possible?

Ans ☒ 1. $3\text{Cu} + \text{FeCl}_3 \rightarrow 3\text{CuCl}_2 + \text{Fe}$

☒ 2. $\text{Zn} + \text{CuCl}_2 \rightarrow \text{ZnCl}_2 + \text{Cu}$

☒ 3. $3\text{Ag} + \text{AlCl}_3 \rightarrow 3\text{AgCl} + \text{Al}$

☒ 4. $\text{Cu} + \text{ZnCl}_2 \rightarrow \text{CuCl}_2 + \text{Zn}$

Q.92 What sum of money will amount to ₹1,116 at 4% per annum simple interest in 6 years?

Ans ☒ 1. ₹900

☒ 2. ₹800

☒ 3. ₹700

☒ 4. ₹1,000

Q.93 Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 13 km/h and speed of the other is 14 km/h. After how long will they be 2 km apart if they start driving together?

- Ans**
- ☐ 1. 1 hour
 - ☐ 2. 1 hour 30 minutes
 - ☒ 3. 2 hours
 - ☐ 4. 2 hours 10 minutes

Q.94 In August 2024, the Mukhyamantri Mahila Samman Yojana was launched by which of the following states?

- Ans**
- ☐ 1. Bihar
 - ☐ 2. Madhya Pradesh
 - ☒ 3. Jharkhand
 - ☐ 4. Odisha

Q.95 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 8 3 2 3 8 8 4 7 9 6 2 3 3 8 2 6 6 2 5 6 4 7 9 7 7 6 7 8 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 1
 - ☐ 2. 3
 - ☒ 3. 0
 - ☐ 4. 2

Q.96 The difference in the measures of two complementary angles is 18° . Find the measure of the smaller angle.

- Ans**
- ☐ 1. 35°
 - ☐ 2. 38°
 - ☐ 3. 34°
 - ☒ 4. 36°

Q.97 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explains the event/observation/information given in the statement.

Statement - Despite having a highly skilled workforce, Company A has not been profitable for the past three years.

I. The company is located in a region where the cost of functioning is extremely high.

II. The CEO of Company A is a well-known philanthropist.

- Ans**
- ☐ 1. Only II is a possible reason
 - ☐ 2. Neither I nor II is a possible reason
 - ☒ 3. Only I is a possible reason
 - ☐ 4. Both I and II are possible reasons

Q.98 A fruit vendor bought 800 apples for ₹4,800. He spent ₹800 on transportation. For how much should he sell each apple to get a profit of ₹10 on each apple?

- Ans**
- ☐ 1. ₹12
 - ☐ 2. ₹76
 - ☐ 3. ₹32
 - ☒ 4. ₹17

Q.99 What is the name of the phenomenon that causes white light to split into seven colours as it passes through a glass prism?

Ans ✓ 1. Dispersion

✗ 2. Scattering

✗ 3. Diffraction

✗ 4. Refraction

Q.100 Which of the following phenomena is the reason behind wearing cotton clothes in summer?

Ans ✓ 1. Evaporation

✗ 2. Sublimation

✗ 3. Fusion

✗ 4. Condensation

2024/12/26-21:42:24



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Oxford Public School Ranchi
Test Date	24/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The work done (in Joule) by a constant force of 10 N on an object that is displaced by an amount D meter in the direction of the force is:

Ans ☒ 1. D

☒ 2. 0

☒ 3. +10D

☒ 4. -10D

Q.2 Which of the following is/are correct about non-biodegradable substances?

A. These substances are not broken down through biological processes.

B. These substances persist in the environment for a short period.

C. These substances may harm the various members of the ecosystem.

Ans ☒ 1. Both B and C

☒ 2. Only B

☒ 3. A, B and C

☒ 4. Both A and C

Q.3 A man sold a shirt for ₹960, at a loss of 4%. He sold a sweater for ₹840 at a profit of 20%. Find his net profit or loss.

Ans ☒ 1. Loss, ₹100

☒ 2. Loss, ₹123

☒ 3. Profit, ₹100

☒ 4. Profit, ₹123

Q.4 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DZM, GYL, JXK, MWJ, ?

- Ans**
- ✓ 1. PVI
 - ✗ 2. ORI
 - ✗ 3. RVI
 - ✗ 4. OVI

Q.5 The mean proportion between the numbers a and b is 6. Which of the following pairs of numbers can be the values of a and b?

- Ans**
- ✗ 1. 12 and 16
 - ✓ 2. 12 and 3
 - ✗ 3. 16 and 4
 - ✗ 4. 10 and 6

Q.6 In 2024, the Union Cabinet approved the continuation of three umbrella schemes merged into a unified central sector scheme under the Department of Science and Technology (DST). What is the name of this unified scheme?

- Ans**
- ✓ 1. Vigyan Dhara
 - ✗ 2. Science Bharat
 - ✗ 3. Technology for Tomorrow
 - ✗ 4. Vigyan Manthan

Q.7 Which of the listed cellular organelles is/are found exclusively in plant cells?

- a. Mitochondria
- b. Plastids
- c. Golgi apparatus
- d. Vacuoles
- e. Cell wall
- f. Lysosomes

- Ans**
- ✗ 1. a and c
 - ✓ 2. b, d and e
 - ✗ 3. c and d
 - ✗ 4. f

Q.8 Who is the Goldman Environmental Prize winner of 2024?

- Ans**
- ✗ 1. Ajay Banga
 - ✓ 2. Alok Shukla
 - ✗ 3. Gary Ruvkun
 - ✗ 4. Karpoori Thakur

Q.9 TRIFED was established in 1987 under the Ministry of Tribal Affairs to:

- Ans**
- ✗ 1. promote the education of tribal children
 - ✗ 2. promote industrial development in tribal areas
 - ✓ 3. facilitate the marketing of tribal products and empower tribal people
 - ✗ 4. provide financial aid to tribal individuals

Q.10 Which government passed the Aparajita Women and Child Bill, 2024, in September 2024?

- Ans**
- ☐ 1. Uttar Pradesh
 - ☒ 2. West Bengal
 - ☐ 3. Punjab
 - ☐ 4. Delhi

Q.11 If 'A' stands for '×', 'B' stands for '+', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$12 \text{ D } 15 \text{ B } 3 \text{ C } 6 \text{ A } 5 = ?$$

- Ans**
- ☐ 1. 34
 - ☐ 2. 36
 - ☒ 3. 37
 - ☐ 4. 31

Q.12 Which of the following is a common drawback of using soap in hard water?

- Ans**
- ☐ 1. Soap loses its colour in hard water.
 - ☒ 2. Formation of soap scum due to the reaction with calcium and magnesium ions.
 - ☐ 3. Soap creates too much lather.
 - ☐ 4. Soap dissolves too quickly in hard water.

Q.13 The rate of change of momentum is proportional to the applied unbalanced:

- Ans**
- ☒ 1. force
 - ☐ 2. torque
 - ☐ 3. angular momentum
 - ☐ 4. moment of inertia

Q.14 Identify the body part that does NOT contain involuntary muscles.

- Ans**
- ☒ 1. Biceps
 - ☐ 2. Heart
 - ☐ 3. Stomach
 - ☐ 4. Lungs

Q.15 A constant force is acting on a body of mass 2 kg for 4 s and its velocity changes from 8 m/s to 12 m/s. The magnitude of the applied force is:

- Ans**
- ☐ 1. 3 N
 - ☒ 2. 2 N
 - ☐ 3. 1 N
 - ☐ 4. 4 N

Q.16 An object of height 30 cm is placed in front of a concave lens and an image of height 10 cm is formed. The magnification of the lens is:

- Ans**
- ☐ 1. -20
 - ☐ 2. 20
 - ☐ 3. 3
 - ☒ 4. 1/3

Q.17 Which of the following statements is true with respect to regeneration?

- Ans**
- ☐ 1. Regeneration gives rise to a totally new organism.
 - ☐ 2. No organism on earth has the ability to regenerate.
 - ☐ 3. Regeneration and reproduction are the same process with different names in all organisms.
 - ☒ 4. Regeneration is not the same as reproduction.

Q.18 Deepthi Jeevanji set a new world record in the women's T20 400-m event at the:

- Ans**
- ☐ 1. World Para Swimming Championships
 - ☐ 2. World Para Badminton Championships
 - ☐ 3. World Para Table Tennis Championships
 - ☒ 4. World Para Athletics Championships

Q.19 Jimmy starts from point A and drives 6 km towards the South. He then takes two simultaneous left turns and drives 4 km and 6 km, respectively. He then takes a final right turn and drives 4 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees only unless specified.)

- Ans**
- ☐ 1. 4 km west
 - ☐ 2. 6 km West
 - ☒ 3. 8 km West
 - ☐ 4. 6 km South

Q.20 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All belts are watches.

No belt is a tie.

Conclusions:

(I) No watch is a tie.

(II) At least some watches are belts.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☒ 2. Only conclusion II follows
 - ☐ 3. Both conclusions I and II follow
 - ☐ 4. Neither conclusion I nor II follows

Q.21 The temperature at which a liquid starts boiling at atmospheric pressure is known as _____.

- Ans**
- ☐ 1. fusion point
 - ☐ 2. melting point
 - ☒ 3. boiling point
 - ☐ 4. triple point

Q.22 When an object of mass 'm' falls freely to the ground from a height 'h', at what point is the object's kinetic energy maximum?

- Ans**
- ☐ 1. At halfway through the fall.
 - ☒ 2. When it is about to hit the ground.
 - ☐ 3. At the start of the fall.
 - ☐ 4. At one-fourth way through the fall.

Q.23 What is the energy consumed when 1 watt of power is used for 1 hour?

- Ans**
- ☒ 1. 1 watt hour
 - ☐ 2. 6 kilowatt hour
 - ☐ 3. 1 kilowatt hour
 - ☐ 4. 60 watt hour

Q.24 19 people are standing in a row facing North. Drisha is 17th from the right end while Vani is 9th from the left end. How many people are there between Drisha and Vani?

- Ans**
- ☐ 1. 8
 - ☐ 2. 3
 - ☐ 3. 2
 - ☒ 4. 5

Q.25 The greatest natural number, which exactly divides the product of any four consecutive natural numbers is:

- Ans**
- ☒ 1. 24
 - ☐ 2. 12
 - ☐ 3. 6
 - ☐ 4. 120

Q.26 Which of the following statements is NOT correct?

- Ans**
- ☒ 1. Larger the focal length, larger the power.
 - ☐ 2. The power of convex lens is positive.
 - ☐ 3. The power of concave lens is negative.
 - ☐ 4. Larger the focal length, smaller is the power.

Q.27 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 9 3 9 2 2 1 9 0 6 0 2 5 1 0 2 5 3 8 8 9 6 5 4 0 0 6 0 2 5 3 (Right)

What is the sum of the 3rd digit from the left and the 3rd digit from the right?

- Ans**
- ☐ 1. 10
 - ☒ 2. 11
 - ☐ 3. 9
 - ☐ 4. 12

Q.28 On simple interest, a certain sum of money amounts to ₹1,400 in 2 years and to ₹2,000 in 5 years. Find the rate of interest per annum.

- Ans**
- ☐ 1. 25%
 - ☐ 2. 11.11%
 - ☒ 3. 20%
 - ☐ 4. 16.67%

Q.29 Which pair in the reactivity series represents the most and least reactive metal pairs?

- Ans**
- ☐ 1. Magnesium and gold
 - ☐ 2. Sodium and gold
 - ☒ 3. Potassium and gold
 - ☐ 4. Calcium and gold

Q.30 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 116 :: 16 : Y

- Ans**
- ☒ 1. X = 13, Y = 145
 - ☒ 2. X = 13, Y = 143
 - ☒ 3. X = 13, Y = 144
 - ☒ 4. X = 11, Y = 143

Q.31 Who among the following launched ADITI 2.0 challenges and DISC 12 to foster innovation, entrepreneurship and 'Aatmanirbharta' in defence during DefConnect 4.0 on 7 October 2024?

- Ans**
- ☒ 1. Shri Shaktikanta Das
 - ☒ 2. Shri Rajnath Singh
 - ☒ 3. Shri Narendra Modi
 - ☒ 4. Shri Amit Shah

Q.32 If $a + \frac{1}{a} = 7$, then $a^2 + \frac{1}{a^2} = ?$

- Ans**
- ☒ 1. 46
 - ☒ 2. 48
 - ☒ 3. 44
 - ☒ 4. 47

Q.33 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No statue is a book.

No book is a copy.

Conclusions:

(I) No copy is a statue.

(II) Some books are statues.

- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☒ 2. Both conclusions (I) and (II) follow
 - ☒ 3. Only conclusion (I) follows
 - ☒ 4. Neither conclusion (I) nor (II) follows

Q.34 Which of the following statements is/are correct related to eco-system?

- (i) Food we eat is digested by various enzymes in our body.
- (ii) Enzyme is specific in their action.
- (iii) Specific enzymes are needed for the breakdown of a particular substance.

- Ans**
- ☒ 1. Only (ii) and (iii)
 - ☒ 2. Only (i)
 - ☒ 3. (i), (ii) and (iii)
 - ☒ 4. Only (i) and (ii)

Q.35 The sides of a rectangle are in the ratio 5 : 3 and its perimeter is 112 cm. The area of this rectangle is:

- Ans**
- ☐ 1. 595 cm^2
 - ☐ 2. 695 cm^2
 - ☐ 3. 620 cm^2
 - ☒ 4. 735 cm^2

Q.36 The gravitational force between two objects:

- Ans**
- ☐ 1. only depends on the masses of the objects
 - ☐ 2. only depends on the distance between the objects
 - ☒ 3. depends on the masses of the objects and the distance between them
 - ☐ 4. does not depend on either the masses of the objects or the distance between them

Q.37 Which of the following is NOT a property of a colloidal solution?

- Ans**
- ☐ 1. A colloid is a heterogeneous mixture.
 - ☐ 2. The components of a colloidal solution are only the dispersed phase and the dispersion medium.
 - ☒ 3. The size of the particles of a colloid is very large.
 - ☐ 4. A colloid is big enough to scatter a beam of light passing through it and make its path visible.

Q.38 Which of the following factors decreases the rate of evaporation?

- Ans**
- ☐ 1. Increase in wind speed
 - ☐ 2. Increase in surface area
 - ☐ 3. Increase in temperature
 - ☒ 4. Increase in humidity

Q.39 Who won India's first-ever medal in the men's 50m Rifle 3-Positions final at the Paris 2024 Olympics?

- Ans**
- ☒ 1. Swapnil Kusale
 - ☐ 2. Anish Bhanwala
 - ☐ 3. Arjun Babuta
 - ☐ 4. Divyansh Singh Panwar

Q.40 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TO-RM-PQ

WR-UP-ST

- Ans**
- ☐ 1. SN-QL-OR
 - ☐ 2. VQ-TO-RU
 - ☒ 3. UP-SN-QR
 - ☐ 4. XS-VQ-TW

Q.41 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. B sits third to the left of E. F sits second to the left of C. Only E sits between K and F. D is not an immediate neighbour of B.

How many people sit between G and F when counted from the right of G?

- Ans**
- ☐ 1. One
 - ☐ 2. Three
 - ☐ 3. Four
 - ☒ 4. Two

Q.42 The marked price of a fan is ₹620. Due to off season, a discount of 15% is allowed. The selling price of the fan is:

- Ans**
- ☐ 1. ₹537
 - ☐ 2. ₹427
 - ☒ 3. ₹527
 - ☐ 4. ₹547

Q.43 Which of the following is true regarding the principal axis of a spherical mirror?

- Ans**
- ☐ 1. It is parallel to the surface of the mirror.
 - ☐ 2. It is located at the edge of the mirror.
 - ☒ 3. It is normal to the mirror at its pole.
 - ☐ 4. It intersects the surface of the mirror at an angle of 45 degrees.

Q.44 Which of the following statements about Thomson's model of an atom is INCORRECT?

- Ans**
- ☐ 1.
The negative and positive charges are equal in magnitude. So, the atom as a whole is electrically neutral.
 - ☒ 2.
The negative and positive charges are not equal in magnitude. So, the atom as a whole is not electrically neutral.
 - ☐ 3. An atom consists of a positively charged sphere and the electrons are embedded in it.
 - ☐ 4.
The positive charge in the atom is spread all over like the red edible part of a watermelon, while the electrons are studded in the positively charged sphere, like the seeds in the watermelon.

Q.45 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

VYR, TWP, RUN, PSL, ?

- Ans**
- ☒ 1. NQJ
 - ☐ 2. NJQ
 - ☐ 3. JQN
 - ☐ 4. JNQ

Q.46 Which of the following plant cells have large membranous organelles that help in photosynthesis?

- Ans**
- ☐ 1. Nucleus
 - ☒ 2. Plastids
 - ☐ 3. Lysosomes
 - ☐ 4. Golgi body

Q.47 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. ID-GK
 - ☐ 2. RM-PT
 - ☐ 3. VQ-TX
 - ☒ 4. LG-JM

Q.48 If $x : 6 :: 6 : y$, then the value of $\sqrt{xy}$ is:

- Ans**
- ☒ 1. 6
 - ☐ 2. 8
 - ☐ 3. 4
 - ☐ 4. 16

Q.49 In a certain code language, 'We Are Happy' is written as 'Bi Hi Mi', 'They Are Sad' is written as 'Di Mi Si' and 'Happy And Sad' is written as 'Si Gi Bi'. How is 'We' written in the given language?

- Ans**
- ☐ 1. Si
 - ☒ 2. Hi
 - ☐ 3. Mi
 - ☐ 4. Bi

Q.50 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 7 8 9 6 7 7 5 8 9 2 5 5 9 5 5 9 5 4 6 7 2 8 3 5 8 3 9 7 9 (Right)

How many such even digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 1
 - ☐ 2. 3
 - ☒ 3. 2
 - ☐ 4. 0

Q.51 Which tissue is a distinctive feature of complex plants, one that has made possible their survival in the terrestrial environment?

- Ans**
- ☐ 1. Connective tissue
 - ☒ 2. Vascular tissue
 - ☐ 3. Epithelial tissue
 - ☐ 4. Meristematic tissue

Q.52 If the price of rice is 30% less than that of wheat, then the price of wheat is approximately what percentage more than that of rice?

- Ans**
- ☐ 1. 37.5%
 - ☒ 2. 42.86%
 - ☐ 3. 45%
 - ☐ 4. 40.65%

Q.53 Which of the following parts of a plant does NOT take part in vegetative propagation?

- Ans**
- ☒ 1. Flower
 - ☐ 2. Root
 - ☐ 3. Leaves
 - ☐ 4. Stem

Q.54 The floor of an office has dimensions $5\text{ m} \times 3\text{ m}$. The cost of painting the walls is ₹8,640 at the rate of ₹60/m². Find the height of the room (in m).

- Ans**
- ☐ 1. 8
 - ☐ 2. 9.5
 - ☐ 3. 8.5
 - ☒ 4. 9

Q.55 Amita's income in 2019 was ₹21,000. She gets an increment of 10% every year. What was her income in 2021?

- Ans**
- ☒ 1. ₹25,410
 - ☐ 2. ₹26,530
 - ☐ 3. ₹23,100
 - ☐ 4. ₹29,100

Q.56 The square root of 6084 is:

- Ans**
- ☐ 1. 76
 - ☒ 2. 78
 - ☐ 3. 64
 - ☐ 4. 82

Q.57 When a decomposition reaction of Limestone is carried out by heating, it is called _____.

- Ans**
- ☐ 1. double displacement reaction
 - ☐ 2. combination reaction
 - ☐ 3. exothermic reaction
 - ☒ 4. thermal decomposition

Q.58 The first law of motion is known as the:

- Ans**
- ☐ 1. law of torque
 - ☐ 2. law of angular momentum
 - ☒ 3. law of inertia
 - ☐ 4. law of linear momentum

Q.59 In a certain code language,

'A + B' means 'A is the mother of B',

'A - B' means 'A is the son of B',

'A x B' means 'A is the husband of B'

and 'A ÷ B' means 'A is the brother of B'.

How is A related to X if 'X - Y x Z + A ÷ B'?

- Ans
- ☐ 1. Father's father
 - ☒ 2. Brother
 - ☐ 3. Father
 - ☐ 4. Son

Q.60 As of 28 August 2024, how many years has the Pradhan Mantri Jan Dhan Yojana (PMJDY) completed since its launch?

- Ans
- ☐ 1. 5 years
 - ☐ 2. 12 years
 - ☐ 3. 8 years
 - ☒ 4. 10 years

Q.61 In a certain code language, 'whispering wind dances' is coded as 'snxk rkww vzod', and 'wind dances gracefully' is coded as 'snxk vzod lwon'. What is the code for 'gracefully' in the given code language?

- Ans
- ☐ 1. rkww
 - ☐ 2. snxk
 - ☐ 3. vzod
 - ☒ 4. lwon

Q.62 Two trains, 125 m and 165 m in length, respectively, are running in opposite directions, one at the rate of 80 km/h and the other at the rate of 65 km/h. In how many seconds will they be completely clear of each other from the moment they meet?

- Ans
- ☒ 1. 7.2 sec
 - ☐ 2. 7.5 sec
 - ☐ 3. 6.8 sec
 - ☐ 4. 6.5 sec

Q.63 Identify the INCORRECT statement related to transportation in plants.

- a. Phloem helps in mineral and water absorption from the soil.
- b. Root hair increases the root's surface area for water and mineral absorption.
- c. Special vascular tissue in plants transports water and nutrients from the soil.
- d. Roots and leaves are joined by a continuous network of xylem channels.

- Ans
- ☐ 1. c and d
 - ☐ 2. b and c
 - ☐ 3. Only d
 - ☒ 4. Only a

Q.64 Which of the following terms is used for the impurities found in ores mining ?

- Ans**
- ✓ 1. Gangue
 - ✗ 2. Anode mud
 - ✗ 3. Calcinations
 - ✗ 4. Roasting

Q.65 Which of the following is correct about the relationship between power and focal length of a lens?

- Ans**
- ✓ 1. Power is inversely proportional to focal length.
 - ✗ 2. Power is directly proportional to focal length.
 - ✗ 3. Power is directly proportional to square of the focal length.
 - ✗ 4. Power is inversely proportional to square of the focal length.

Q.66 Which of the following are parts of the male reproductive system?

- Ans**
- ✗ 1. Uterus and Vagina
 - ✓ 2. Vas deferens and scrotum
 - ✗ 3. Fallopian tube and penis
 - ✗ 4. Vas deferens and oviduct

Q.67 What will come in the place of '?' in the following equation, if '×' and '−' are interchanged and '+' and '÷' are interchanged?

$$15 \times 5 - 56 \div 28 + 3 = ?$$

- Ans**
- ✗ 1. 62
 - ✗ 2. -13
 - ✗ 3. 25
 - ✓ 4. 8

Q.68 Carbon monoxide reacts with hydrogen molecule to yield which of the following compounds?

- Ans**
- ✓ 1. $\text{CH}_3\text{OH(l)}$
 - ✗ 2. $\text{H}_2\text{O(l)}$
 - ✗ 3. $\text{C(s)} + \text{H}_2\text{O(l)}$
 - ✗ 4. $\text{CH}_4\text{(g)} + \text{O}_2\text{(g)}$

Q.69 If $1^2 + 2^2 + 3^2 + \dots + 10^2 = 385$, then $3^2 + 6^2 + 9^2 + \dots + 30^2$ is equal to

- Ans**
- ✗ 1. 770
 - ✗ 2. 1155
 - ✗ 3. 2310
 - ✓ 4. 3465

Q.70 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

429, 534, 452, 557, 475, ?

- Ans**
- ✗ 1. 574
 - ✗ 2. 555
 - ✗ 3. 592
 - ✓ 4. 580

Q.71 The two isotopic forms of chlorine, with masses 35 u and 37 u, are found in which of the following ratios in nature?

- Ans**
- ☐ 1. 1 : 3
 - ☒ 2. 3 : 1
 - ☐ 3. 1 : 1
 - ☐ 4. 1 : 5

Q.72 Which technique is useful for the separation of colloidal particles?

- Ans**
- ☐ 1. Filtration technique
 - ☒ 2. Centrifugation technique
 - ☐ 3. Sublimation technique
 - ☐ 4. Recrystallisation technique

Q.73 Who is the author of the book '2024: The Election that Surprised India'?

- Ans**
- ☐ 1. Arnab Goswami
 - ☐ 2. Prannoy Roy
 - ☐ 3. Barkha Dutt
 - ☒ 4. Rajdeep Sardesai

Q.74 Select the correct statement related to sexual reproduction in flowering plants.

- Ans**
- ☐ 1. After fertilisation, an embryo is formed without any division in zygote.
 - ☐ 2. After fertilisation, ovary develops into a seed.
 - ☐ 3. After fertilisation, ovule develops into fruit.
 - ☒ 4.

On a suitable stigma pollen tubes grow out of the pollen grain and travel through the style and reach the ovary.

Q.75 Which of the following expressions is correct?

1. $\text{Mode} - \text{median} = 2 (\text{median} - \text{mean})$

2. $\text{Median} = \frac{\text{Mode} + \text{median}}{2}$

3. $\text{Mode} = 2 \text{ Median} - \text{mean}$

4. $\text{Mean} = \frac{2\text{Median} - \text{mode}}{2}$

- Ans**
- ☒ 1. 1
 - ☐ 2. 3
 - ☐ 3. 2
 - ☐ 4. 4

Q.76 The sum of two numbers is 42 and one of them exceeds the other by 18. Find the greater number.

- Ans**
- ☐ 1. 24
 - ☐ 2. 32
 - ☒ 3. 30
 - ☐ 4. 28

Q.77 Study the given table and answer the question that follows.

The table depicts the kilograms of rice consumed by Ravi and Kapil in the month of June and July.

	Rice consumed in June (in kg)	Rice consumed in July (in kg)
Ravi	9	12
Kapil	8	10

What is the difference between the total amount of rice consumed by Ravi and Kapil in the month of July and June?

- Ans**
- ☐ 1. 7 kg
 - ☐ 2. 6 kg
 - ☒ 3. 3 kg
 - ☐ 4. 5 kg

Q.78 Suppose a number of rays parallel to the principal axis are falling on a concave mirror, then all the reflected rays will intersect:

- Ans**
- ☐ 1. at infinity
 - ☐ 2. at the pole
 - ☐ 3. in between the pole and infinity
 - ☒ 4. at the principal focus

Q.79 In which of the following phenomena is solid state directly transformed into gaseous state without changing into liquid state?

- Ans**
- ☒ 1. Sublimation
 - ☐ 2. Fusion
 - ☐ 3. Deposition
 - ☐ 4. Solidification

Q.80 In this question, two statements, I and II, have been given. These statements may be independent causes, or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements and select the correct answer.

I. Consumption of sugar has been found out as the main reason for people having diabetes

II. People are avoiding having foods with more sugar content

- Ans**
- ☐ 1. Both I and II are independent causes
 - ☐ 2. Both I and II are effects of independent causes
 - ☐ 3. II is the cause and I is its possible effect
 - ☒ 4. I is the cause and II is its possible effect

Q.81 Which of the following is NOT a prime number?

- Ans**
- ☐ 1. 61
 - ☐ 2. 31
 - ☐ 3. 71
 - ☒ 4. 91

Q.82 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

LH-KG-JI

VR-UQ-TS

- Ans**
- ☒ 1. UP-SO-RT
 - ☒ 2. TP-SO-RQ
 - ☒ 3. UP-SN-RQ
 - ☒ 4. TP-SN-RT

Q.83 In a parallelogram ABCD, the length of the line joining the midpoints of AD and AC is 2 units. If the perimeter of the parallelogram is 26 units, then find the length of AD.

- Ans**
- ☒ 1. 8 units
 - ☒ 2. 6 units
 - ☒ 3. 4 units
 - ☒ 4. 9 units

Q.84 The HCF of 16, 20 and 24 is:

- Ans**
- ☒ 1. 2
 - ☒ 2. 6
 - ☒ 3. 4
 - ☒ 4. 8

Q.85 P, Q and R can fill a tank in 9 hours, 18 hours and 12 hours, respectively. They start the work i.e. filling the tank, with P working on hour 1, Q working on hour 2 and R working on hour 3, and then continuing with this cycle till the work is completed. How many hours will be needed to complete this work in this manner?

- Ans**
- ☒ 1. 11 hours
 - ☒ 2. 16 hours
 - ☒ 3. 15 hours
 - ☒ 4. 12 hours

Q.86 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 108 :: 9 : Y

- Ans**
- ☒ 1. X = 12, Y = 81
 - ☒ 2. X = 12, Y = 126
 - ☒ 3. X = 16, Y = 145
 - ☒ 4. X = 14, Y = 81

Q.87 Swarna borrowed a sum of ₹12,000 from Jayshree at a rate of 10% per annum on compound interest, compounded annually. Find the total amount paid by Swarna after 2 years to clear all the dues.

- Ans**
- ☒ 1. ₹14,520
 - ☒ 2. ₹14,980
 - ☒ 3. ₹14,890
 - ☒ 4. ₹14,620

Q.88 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. BGT
 - ✗ 2. GNU
 - ✗ 3. YFM
 - ✗ 4. KRY

Q.89 The atomic mass of an atom is primarily determined by the number of:

- Ans**
- ✗ 1. protons
 - ✗ 2. neutrons
 - ✓ 3. nucleons
 - ✗ 4. electrons

Q.90 Considering magnetic field lines, which of the following statements is NOT true?

- Ans**
- ✗ 1. 
 - ✓ 2. If magnetic field lines are parallel and equidistant, they represent zero field strength.
 - ✗ 3. The direction of the magnetic field at a point is taken to be the direction in which the north pole of a magnetic compass needle points.
 - ✗ 4. The relative strength of magnetic field exists and can be shown by the degree of closeness of the field lines.

Q.91 How many types of endoplasmic reticulum are there in cells?

- Ans**
- ✗ 1. Four
 - ✗ 2. Five
 - ✓ 3. Two
 - ✗ 4. Three

Q.92 Simplify the following expression:

$$\frac{\sin \theta}{1 - \cos \theta} + \frac{1 - \cos \theta}{\sin \theta}$$

- Ans**
- ✗ 1. $2 \sin \theta$
 - ✓ 2. 
 - ✗ 3. $2 \cos \theta$
 - ✗ 4. $2 \sec \theta$

Q.93 Which of the following is the rod-shaped structure found in the nucleus only when the cell is about to divide?

- Ans**
- ✓ 1. Chromosomes
 - ✗ 2. Mitochondria
 - ✗ 3. Chromatin
 - ✗ 4. Lysosomes

Q.94 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only two people sit to the left of A. Only three people sit between A and Y. L sits second to the right of A. Only two people sit between L and Z. C sits at some place to the right of B but at some place to the left of X.

How many people sit to the right of C?

- Ans**
- ☐ 1. Two
 - ☒ 2. Three
 - ☐ 3. Four
 - ☐ 4. One

Q.95 A large tanker can be filled by two pipes A and B in 60 minutes and 40 minutes, respectively. How many minutes will it take to fill the tanker from empty state, if B is used for half the time and A and B fill it together for the other half?

- Ans**
- ☒ 1. 30 min
 - ☐ 2. 20 min
 - ☐ 3. 27.5 min
 - ☐ 4. 15 min

Q.96 In which of the following months in 2024 did the Sahitya Akademi organise a two-day Birth Centenary Symposium on 'Prabhjot Kaur and Colonel Narinder Pal Singh'?

- Ans**
- ☐ 1. March
 - ☐ 2. September
 - ☐ 3. January
 - ☒ 4. October

Q.97 Ishan is younger than Surya by 3 years. If the ages of Ishan and Surya are in the ratio 5 : 8, then how old is Surya?

- Ans**
- ☐ 1. 5 years
 - ☒ 2. 8 years
 - ☐ 3. 7 years
 - ☐ 4. 10 years

Q.98 There are two sections A and B of a class, consisting of 18 and 22 students, respectively. If the average weight of section A is 40 kg and that of section B is 35 kg, find the average weight of the whole class.

- Ans**
- ☐ 1. 38.5 kg
 - ☒ 2. 37.25 kg
 - ☐ 3. 38.25 kg
 - ☐ 4. 37.5 kg

Q.99 _____ plays a crucial role in the long-term survival of species.

- Ans**
- ☐ 1. Reproduction
 - ☒ 2. Variation
 - ☐ 3. Growth and development
 - ☐ 4. Fragmentation

Q.100 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 5 4 1 6 2 7 3 8 7 4 6 1 4 9 7 3 9 9 8 4 2 4 3 0 2 8 3 7 3 (Right)

What is the sum of the 12th digit from the left and the 2nd digit from the right?

Ans ☐ 1. 14

☒ 2. 13

☐ 3. 12

☐ 4. 15

2024/12/26-22:15:13



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Purnea
Test Date	24/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The average of the first five prime numbers greater than 20 is:

- Ans
- ☒ 1. 31.1
 - ☒ 2. 32.7
 - ☒ 3. 31.7
 - ☒ 4. 32.2

Q.2 Which of the following is INCORRECT about plant hormones?

- Ans
- ☒ 1. All plant hormones except abscisic acid help in promoting growth.
 - ☒ 2. All plant hormones except cytokinins promote cell division.
 - ☒ 3. Different plant hormones help to coordinate growth and development.
 - ☒ 4. Different plant hormones help to coordinate responses to the environment.

Q.3 In order to put up Rutherford's model, what type of metal foil did the scientist use?

- Ans
- ☒ 1. Palladium
 - ☒ 2. Silver
 - ☒ 3. Gold
 - ☒ 4. Platinum

Q.4 Simplify the given expression.

$$4 - 36 \div 4 + 2 \times 5$$

- Ans
- ☒ 1. 6
 - ☒ 2. 5
 - ☒ 3. 3
 - ☒ 4. 4

Q.5 Considering the right-hand thumb rule, what parameter is indicated by the fingers curled around the conductor?

- Ans**
- ✓ 1. Magnetic field
 - ✗ 2. Deflection of needle
 - ✗ 3. Current
 - ✗ 4. Force

Q.6 A bag marked at ₹80 is sold for ₹68. The rate of discount is:

- Ans**
- ✓ 1. 15%
 - ✗ 2. 17.5%
 - ✗ 3. 20%
 - ✗ 4. 12%

Q.7 Which of the following carries egg from the ovary to the womb?

- Ans**
- ✗ 1. Vagina
 - ✗ 2. Placenta
 - ✓ 3. Fallopian tube
 - ✗ 4. Cervix

Q.8 Rita, Suman, Tarun, Uma, Victor and Wendy are sitting around a circular table facing the centre. Rita sits third to the right of Suman. Tarun sits second to left of Suman. Uma sits to the immediate left of Rita. Victor is not an immediate neighbour of Tarun.

How many people sit between Suman and Victor when counted from the right of Suman ?

- Ans**
- ✗ 1. Two
 - ✗ 2. One
 - ✓ 3. Zero
 - ✗ 4. Three

Q.9 An athlete is moving with uniform speed in a circular track of radius R , and he completes one round in t s. The speed of the athlete is:

- Ans**
- ✗ 1. $\frac{3\pi R}{t}$
 - ✗ 2. $\frac{\pi R}{t}$
 - ✗ 3. $\frac{\pi R}{2t}$
 - ✓ 4. $\frac{2\pi R}{t}$

Q.10 What will come in the place of '?' in the following equation, if '×' and '+' are interchanged and '-' and '÷' are interchanged?

$$7 \div 3 + 15 - 28 \times 7 = ?$$

- Ans**
- ✗ 1. 100
 - ✗ 2. 40
 - ✓ 3. 10
 - ✗ 4. 70

Q.11 What is the function of gustatory receptors?

- Ans**
- ☐ 1. They detect smell.
 - ☐ 2. They detect sound.
 - ☒ 3. They detect taste.
 - ☐ 4. They detect light.

Q.12 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 8 9 7 1 4 1 5 7 5 8 9 6 1 0 6 2 4 6 1 1 9 0 3 1 8 9 4 3 1 7 (Right)

What is the sum of the 8th digit from the left and the 1st digit from the right?

- Ans**
- ☐ 1. 17
 - ☒ 2. 14
 - ☐ 3. 11
 - ☐ 4. 16

Q.13 Use of regenerative cells in the process of budding is present in:

- Ans**
- ☐ 1. Planaria
 - ☐ 2. Amoeba
 - ☐ 3. Spirogyra
 - ☒ 4. Hydra

Q.14 Study the following table and answer the question.

The table depicts the number of books sold by shops A and B to males and females on Monday

Shops	Number of books sold to males	Number of books sold to females
A	71	78
B	34	40

What is the difference between the number of books sold by shops A and B to females?

- Ans**
- ☐ 1. 40
 - ☐ 2. 39
 - ☐ 3. 37
 - ☒ 4. 38

Q.15 By whom was the 'Ek Ped Maa Ke Naam' tree plantation campaign launched throughout the country on the World Environment Day (5th June 2024)?

- Ans**
- ☐ 1. Shri Bhupender Yadav
 - ☐ 2. Shri Amit Shah
 - ☒ 3. Shri Narendra Modi
 - ☐ 4. Dr. Jitendra Singh

Q.16 Which of the following is the tiny blob-on-a-stick structures in fungi that are involved in reproduction?

- Ans**
- ☐ 1. Gametophyte
 - ☐ 2. Spermatogonia
 - ☐ 3. Sporophyte
 - ☒ 4. Sporangia

Q.17 _____ became the first Indian to win a race at FIA Motorsport Games in October 2024.

- Ans**
- ☐ 1. Jehan Devan Daruvala
 - ☐ 2. Sundaram Karivaradhan
 - ☒ 3. Rivaan Dev Preetham
 - ☐ 4. Narain Karthikeyan

Q.18 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 2 3 3 1 7 8 4 2 8 6 5 4 3 9 1 4 2 1 2 9 1 6 2 3 4 8 1 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit?

(Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 4
 - ☐ 2. 5
 - ☒ 3. 3
 - ☐ 4. 6

Q.19 In a certain code language, 'exercise good health' is coded as 'ni ch tu' and 'exercise improve stamina' is coded as 'pa qi ch'. What is the code for 'exercise' in the given code language?

- Ans**
- ☐ 1. tu
 - ☒ 2. ch
 - ☐ 3. ni
 - ☐ 4. pa

Q.20 Which plant species does NOT reproduce through vegetative propagation?

- Ans**
- ☐ 1. Sugarcane
 - ☐ 2. Banana
 - ☒ 3. Papaya
 - ☐ 4. Rose

Q.21 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. YCGK
 - ☐ 2. XBFJ
 - ☐ 3. MQUY
 - ☒ 4. SVAF

Q.22 Simplify $1.\overline{24}$ as an improper fraction.

- Ans
- ☒ 1. $\frac{91}{90}$
 - ☒ 2. $\frac{41}{33}$
 - ☒ 3. $\frac{124}{99}$
 - ☒ 4. $\frac{123}{90}$

Q.23 The weight of an object was 60 N when measured on the surface of the earth.

What would be its weight when measured on the surface of the moon?

- Ans
- ☒ 1. 39 N
 - ☒ 2. 60 N
 - ☒ 3. 10 N
 - ☒ 4. 30 N

Q.24 If the radius of a circle is decreased by 50%, its area is reduced by:

- Ans
- ☒ 1. 75%
 - ☒ 2. 50%
 - ☒ 3. 33.33%
 - ☒ 4. 25%

Q.25 Find the simple interest on ₹600 at 7% per month in 9 months.

- Ans
- ☒ 1. ₹398
 - ☒ 2. ₹354
 - ☒ 3. ₹378
 - ☒ 4. ₹334

Q.26 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans
- ☒ 1. LGB
 - ☒ 2. SNI
 - ☒ 3. WYU
 - ☒ 4. XSN

Q.27 The sum of the two positive numbers is 55 and their difference is 19. What are the numbers?

- Ans
- ☒ 1. 36, 19
 - ☒ 2. 35, 20
 - ☒ 3. 40, 15
 - ☒ 4. 37, 18

- Q.28** A solid metallic sphere of radius 12 cm is melted and recast into 27 identical spheres. What is the ratio of the surface area of the original sphere to the total surface area of 8 smaller spheres so formed?
- Ans** ☐ 1. 3 : 1
☐ 2. 9 : 4
☐ 3. 3 : 2
☒ 4. 9 : 8
- Q.29** In a certain code language, 'education gives knowledge' is coded as 'ta bi nu' and 'knowledge upgrades skill' is coded as 'hi nu ch'. What is the code for 'knowledge' in the given code language?
- Ans** ☐ 1. hi
☒ 2. nu
☐ 3. ta
☐ 4. bi
- Q.30** Namita starts from point A and drives 6 km towards the South. She takes two simultaneous left turns and drives 4 km and 3 km respectively. She takes a right turn and drives 2 km. She takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees only unless specified.)
- Ans** ☐ 1. 3 km South
☒ 2. 6 km West
☐ 3. 6 km South
☐ 4. 4 km West
- Q.31** Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. A is kept immediately above B. Z is kept immediately above C. Only X is kept above Y. Only two boxes are kept above A. Z is not kept at third position from the bottom.
How many boxes are kept between L and X?
- Ans** ☐ 1. Two
☐ 2. One
☒ 3. Three
☐ 4. Four
- Q.32** The Reserve Bank of India (RBI) announced its monetary policy on 9th October 2024, maintaining the repo rate at _____.
- Ans** ☐ 1. 6.75%
☐ 2. 7.5%
☒ 3. 6.5%
☐ 4. 6.25%
- Q.33** In case of a drastic change in niches of organisms, which of the following can save the population of an organism from getting completely wiped out?
- Ans** ☐ 1. Evolution
☒ 2. Variation
☐ 3. Isolation
☐ 4. Nutrition
- Q.34** The magnetic field lines produced inside a long current carrying solenoid is similar to that of a:
- Ans** ☐ 1. ring magnet
☐ 2. disc magnet
☐ 3. horseshoe magnet
☒ 4. bar magnet

Q.35 _____ has become the first Indian track-and-field athlete to win medals at consecutive Olympics.

- Ans**
- ☐ 1. Manu Bhaker
 - ☒ 2. Neeraj Chopra
 - ☐ 3. Swapnil Kusale
 - ☐ 4. Aman Sehrawat

Q.36 Which of the following symptoms is related to myopia?

- Ans**
- ☐ 1. A person cannot see both nearby and distant objects distinctly.
 - ☐ 2. A person can see distant objects clearly but cannot see nearby objects distinctly.
 - ☒ 3. A person can see nearby objects clearly but cannot see distant objects distinctly.
 - ☐ 4. A person can see both nearby and distant objects distinctly.

Q.37 There is a leak at the bottom of a cistern. Due to this it takes 8 hours to fill the cistern. Had there not been a leak, it would have taken one hour less to fill the cistern. How much time does it take for the leak to completely empty the cistern?

- Ans**
- ☐ 1. $55\frac{1}{3}$ hours
 - ☐ 2. 15 hours
 - ☐ 3. 48 hours
 - ☒ 4. 56 hours

Q.38 Which of the following statements is/are correct related to the eco-system?

- (i) Ozone is a molecule formed by three atoms of oxygen.
- (ii) Oxygen (O_2) is essential for all aerobic forms of life.
- (iii) Ozone is non-poisonous.

- Ans**
- ☐ 1. Only (i)
 - ☐ 2. Only (i) and (iii)
 - ☐ 3. (i), (ii) and (iii)
 - ☒ 4. Only (i) and (ii)

Q.39 If A means +, B means -, C means $\times$, D means $\div$, then what will come in place of the question mark (?) in the following equation?

$$25 \text{ B } 3 \text{ C } 4 \text{ A } 30 \text{ D } 6 = ?$$

- Ans**
- ☐ 1. 20
 - ☐ 2. 17
 - ☒ 3. 18
 - ☐ 4. 19

Q.40 The chemical reaction between an acid and base is termed as:

- Ans**
- ☐ 1. condensation reaction
 - ☒ 2. neutralisation reaction
 - ☐ 3. endothermic reaction
 - ☐ 4. decomposition reaction

Q.41 The Moidams-the Mound-Burial System of the Ahom Dynasty in ____ was added to the list of UNESCO World Heritage Sites in 2024.

- Ans**
- ☐ 1. Meghalaya
 - ☐ 2. Mizoram
 - ☒ 3. Assam
 - ☐ 4. Manipur

Q.42 If the length of a conductor is doubled, then the resistance of the conductor will be: (other parameters are kept same)

- Ans**
- ☐ 1. halved
 - ☐ 2. one fourth
 - ☐ 3. the same
 - ☒ 4. doubled

Q.43 In $\triangle ABC$ if $\angle A = 70^\circ$ and $\angle B = 70^\circ$, find the measure of exterior angle A.

- Ans**
- ☐ 1. 30°
 - ☐ 2. 140°
 - ☒ 3. 110°
 - ☐ 4. 70°

Q.44 Animals like hydra and planaria can be cut into any number of pieces and each piece grows into a complete organism. This is known as:

- Ans**
- ☐ 1. budding
 - ☐ 2. binary fission
 - ☐ 3. fragmentation
 - ☒ 4. regeneration

Q.45 If 63 chocolates are to be divided between A and B in the ratio 4 : 5, then how many chocolates will A get?

- Ans**
- ☐ 1. 35
 - ☐ 2. 49
 - ☐ 3. 27
 - ☒ 4. 28

Q.46 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All bats are balls.

All balls are wickets.

No wickets are gloves.

Conclusions:

(I) Some balls are bats.

(II) Some wickets are balls.

- Ans**
- ☐ 1. Neither conclusion (I) nor (II) follows.
 - ☐ 2. Only conclusion (II) follows.
 - ☒ 3. Both conclusions (I) and (II) follow.
 - ☐ 4. Only conclusion (I) follows.

Q.47 Which of the given substances is NOT biodegradable in nature?

A. Vegetable peels

B. Plastic bottles

C. Spoilt food

Ans ✓ 1. Only B

✗ 2. Both A and C

✗ 3. A, B and C

✗ 4. Only A

Q.48 ____ on 9 September 2024 emphasised that safety and social audits of cities and institutions should be carried out to get a better idea about the lags and issues that currently exist in terms of ensuring women's safety in India.

Ans ✓ 1. The National Human Rights Commission (NHRC)

✗ 2. The Prajnya Trust for Women (PTW)

✗ 3. The All India Federation of Women Lawyers (AIFWL)

✗ 4. The Self-Employed Women's Association (SEWA)

Q.49 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

IE-LH-OQ

FB-IE-LN

Ans ✓ 1. LH-OK-RT

✗ 2. LH-OJ-RS

✗ 3. MH-OK-RS

✗ 4. MH-OJ-RT

Q.50 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 1 3 3 0 6 0 2 9 1 8 4 2 2 5 4 6 8 5 8 1 3 5 0 2 1 3 9 5 4 (Right)

What is the sum of the 15th digit from the left and the 11th digit from the right?

Ans ✗ 1. 11

✗ 2. 16

✓ 3. 13

✗ 4. 14

Q.51 Select the correct chemical reaction that represents the chlor-alkali process.

Ans ✗ 1. $2\text{KCl(aq)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{KOH(aq)} + \text{Cl}_2\text{(g)} + \text{H}_2\text{(g)}$

✗ 2. $2\text{MgCl}_2\text{(aq)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{Mg(OH)}_2\text{(aq)} + \text{Cl}_2\text{(g)} + \text{H}_2\text{(g)}$

✗ 3. $2\text{CaCl}_2\text{(aq)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{Ca(OH)}_2\text{(aq)} + \text{Cl}_2\text{(g)} + \text{H}_2\text{(g)}$

✓ 4. $2\text{NaCl(aq)} + 2\text{H}_2\text{O(l)} \rightarrow 2\text{NaOH(aq)} + \text{Cl}_2\text{(g)} + \text{H}_2\text{(g)}$

Q.52 During the deposition procedure, which type of state conversion will take place?

- Ans**
- ☒ 1. Gaseous to solid state
 - ☐ 2. Liquid to solid state
 - ☐ 3. Solid to liquid state
 - ☐ 4. Solid to gaseous state

Q.53 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some chocolates are pudding.

All puddings are ice creams.

Some ice creams are lollipops.

Conclusions:

(I) Some lollipops are chocolates.

(II) Some ice creams are pudding.

- Ans**
- ☐ 1. Both conclusions (I) and (II) follow.
 - ☒ 2. Only conclusion (II) follows.
 - ☐ 3. Neither conclusion (I) nor (II) follows.
 - ☐ 4. Only conclusion (I) follows.

Q.54 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 45 :: 16 : Y

- Ans**
- ☐ 1. X = 10, Y = 65
 - ☒ 2. X = 10, Y = 75
 - ☐ 3. X = 14, Y = 75
 - ☐ 4. X = 14, Y = 85

Q.55 According to Thomson's model of an atom, an atom is compared to which of the following fruits?

- Ans**
- ☒ 1. Watermelon
 - ☐ 2. Apple
 - ☐ 3. Banana
 - ☐ 4. Mango

Q.56 What will be the name of product that is formed when metals react with air?

- Ans**
- ☐ 1. Metal hydride
 - ☒ 2. Metal oxide
 - ☐ 3. Metal nitrate
 - ☐ 4. Metal chloride

Q.57 Which organisation has partnered with Sagar Defence to develop India's first underwater-launched unmanned aerial vehicles (UAVs)?

- Ans**
- ☐ 1. ISRO
 - ☒ 2. DRDO
 - ☐ 3. Indian Navy
 - ☐ 4. Bharat Electronics Limited (BEL)

Q.58 Which of the following molecules has single covalent bond?

- Ans**
- ☐ 1. CO_2
 - ☒ 2. H_2
 - ☐ 3. N_2
 - ☐ 4. O_2

Q.59 The mean proportional between 0.06 and 24 is:

- Ans**
- ☐ 1. 12
 - ☒ 2. 1.2
 - ☐ 3. 0.12
 - ☐ 4. 0.012

Q.60 From the given following metals, which one is least reactive towards displacement reaction?

Copper, iron, zinc and lead.

- Ans**
- ☐ 1. Iron
 - ☐ 2. Lead
 - ☐ 3. Iron and zinc
 - ☒ 4. Copper

Q.61 There are two statements given below. Select the correct option with regards to these statements.

A. The loss of water in the form of vapour from the aerial parts of the plant is known as transpiration.

B. During the day when the stomata are open, the transpiration pull becomes the major driving force in the movement of water in the xylem.

- Ans**
- ☐ 1. A is incorrect and B is correct.
 - ☐ 2. Both A and B are incorrect.
 - ☐ 3. A is correct and B is incorrect.
 - ☒ 4. Both A and B are correct.

Q.62 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

6, 18, 30, 66, 126, ?

- Ans**
- ☐ 1. 266
 - ☐ 2. 270
 - ☒ 3. 258
 - ☐ 4. 242

Q.63 The aperture of a spherical mirror is:

- Ans
- ☐ 1. the distance between the centre of curvature and the focus
 - ☐ 2. the distance between the object and the mirror
 - ☒ 3. the diameter of the reflecting surface of the mirror
 - ☐ 4. the distance between the image and the mirror

Q.64 Which of the following is the correct unit mass of sodium?

- Ans
- ☒ 1. 23u
 - ☐ 2. 11u
 - ☐ 3. 20u
 - ☐ 4. 18u

Q.65 $75 \times 75 - 2 \times 75 \times 25 + 25 \times 25$ is equal to:

- Ans
- ☐ 1. 7500
 - ☐ 2. 10000
 - ☐ 3. 6250
 - ☒ 4. 2500

Q.66 Two pipes A and B can fill a tank in 15 minutes and 20 minutes, respectively. Both the pipes are opened together but after 4 minutes, pipe A is turned off. What is the total time required to fill the tank?

- Ans
- ☐ 1. 12 min 30 sec
 - ☐ 2. 10 min 20 sec
 - ☐ 3. 11 min 45 sec
 - ☒ 4. 14 min 40 sec

Q.67 The square root of 0.0009 is:

- Ans
- ☒ 1. 0.03
 - ☐ 2. 0.003
 - ☐ 3. 0.27
 - ☐ 4. 0.81

Q.68 The curved surface area of a cylinder is 484 sq. cm. If height of the cylinder is 7 cm, then what is the volume of the cylinder (in cubic cm)? (Use $\pi = \frac{22}{7}$)

- Ans
- ☐ 1. 2200
 - ☐ 2. 2750
 - ☒ 3. 2662
 - ☐ 4. 2650

Q.69 Which of the following statements is correct for a heterogeneous mixture?

- Ans
- ☒ 1. The composition of the mixture is non-uniform.
 - ☐ 2. A clear solution is called a heterogeneous mixture.
 - ☐ 3. Mixtures don't contain physically distinct parts.
 - ☐ 4. The composition of the mixture is uniform.

Q.70 NSQO is related to TYWU in a certain way based on the English alphabetical order. In the same way, JOMK is related to PUSQ. To which of the following options is LQOM related, following the same logic?

- Ans**
- ☐ 1. RWSU
 - ☒ 2. RWUS
 - ☐ 3. WRSU
 - ☐ 4. WRUS

Q.71 Neeta bought 5.5 ltr of mango juice. She and her friends consumed 3 ltr 925 ml of the juice. How much juice is left with her?

- Ans**
- ☐ 1. 1 ltr 275 ml
 - ☐ 2. 1 ltr 475 ml
 - ☐ 3. 1 ltr 375 ml
 - ☒ 4. 1 ltr 575 ml

Q.72 Which of the following forces is responsible for the tides, due to the Moon and the Sun?

- Ans**
- ☐ 1. Electrostatic force
 - ☒ 2. Gravitation force
 - ☐ 3. Electromagnetic force
 - ☐ 4. Nuclear force

Q.73 The average weight of A, B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is:

- Ans**
- ☒ 1. 31 kg
 - ☐ 2. 23 kg
 - ☐ 3. 19 kg
 - ☐ 4. 26 kg

Q.74 Who is the current Directorate General of National Cadet Corps of India as of October 2024?

- Ans**
- ☐ 1. Dalbir Singh Suhag
 - ☐ 2. Manoj Pande
 - ☐ 3. Bikram Singh
 - ☒ 4. Gurbirpal Singh

Q.75 The refractive index is related to:

- Ans**
- ☐ 1. the frequency of light in two different media
 - ☒ 2. the speed of propagation of light in two different media
 - ☐ 3. the magnetic moment of two different media
 - ☐ 4. the dielectric polarizability of two media

Q.76 Match the cell organelles with their respective functions.

Cell organelles	Functions
1. Cell wall	a. Digests any foreign matter and worn-out cellular components
2. Ribosomes	b. Gives plants their structural strength
3. Lysosomes	c. Sites involved in protein manufacture
4. Golgi apparatus	d. Linked to the production of lysosomes

Ans ☐ 1. 1-b, 2-d, 3-c, 4-a

☒ 2. 1-b, 2-c, 3-a, 4-d

☐ 3. 1-a, 2-b, 3-c, 4-d

☐ 4. 1-c, 2-a, 3-d, 4-b

Q.77 Involuntary actions including blood pressure, salivation and vomiting are controlled by:

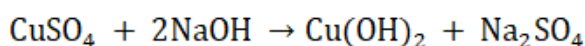
Ans ☐ 1. the cerebellum in the fore-brain

☐ 2. only the spinal cord

☒ 3. the medulla in the hind-brain

☐ 4. only the heart

Q.78 The following equation is an example of which type of reaction?



Ans ☐ 1. Neutralisation reaction

☐ 2. Combination reaction

☐ 3. Combustion reaction

☒ 4. Double displacement reaction

Q.79 What is the remainder when the product of 171 and 173 is divided by 17?

Ans ☐ 1. 11

☒ 2. 3

☐ 3. 1

☐ 4. 7

- Q.80 In a certain code language,
- $A + B$ means 'A is the sister of B',
- $A - B$ means 'A is the wife of B',
- $A \times B$ means 'A is the father of B',
- and $A \div B$ means 'A is the brother of B'.

How is P related to T if ' $P + Q - R \times S \div T$ '?

- Ans
- ☐ 1. Mother's mother
 - ☐ 2. Father's mother
 - ☒ 3. Mother's sister
 - ☐ 4. Father's sister

- Q.81 According to the laws of refraction, which of the following is/are true?

(A) The incident ray, the refracted ray and the normal to the interface of two transparent media do not lie in the same plane.

(B) For a given colour of light and a given pair of media, the ratio of the sine of angle of incidence to sine of angle of refraction is a constant.

- Ans
- ☐ 1. Both 'A' and 'B' are true.
 - ☐ 2. 'A' is true and 'B' is false.
 - ☐ 3. Both 'A' and 'B' are false.
 - ☒ 4. 'A' is false and 'B' is true.

- Q.82 Which of the following is produced when barium chloride reacts with sodium sulphate?

- Ans
- ☒ 1. White precipitate of BaSO_4
 - ☐ 2. Brown precipitate of BaSO_4
 - ☐ 3. Black precipitate of BaSO_4
 - ☐ 4. Yellow precipitate of BaSO_4

- Q.83 Ramu is working hard to push a huge rock by applying 1N force, but the rock does not move at all. The net work done by Ramu is:

- Ans
- ☐ 1. -1 J
 - ☐ 2. 1000 J
 - ☒ 3. 0 J
 - ☐ 4. +1 J

- Q.84 How many seconds will a train of 100 m long take to cross a bridge of 150 m long if the speed of the train is 36 km/h?

- Ans
- ☒ 1. 25
 - ☐ 2. 18
 - ☐ 3. 30
 - ☐ 4. 20

Q.85 A sum of money lent on simple interest becomes $\frac{8}{5}$ of itself in 4 years. Find the rate of interest per annum.

- Ans**
- ☐ 1. 6%
 - ☐ 2. 12%
 - ☒ 3. 15%
 - ☐ 4. 10%

Q.86 Burning of coal is an example of which type of chemical reaction?

- Ans**
- ☒ 1. Combination reaction
 - ☐ 2. Decomposition reaction
 - ☐ 3. Reduction reaction
 - ☐ 4. Double decomposition reaction

Q.87 In this question, two statements, I and II, have been given. These statements may be independent causes, or effects of independent causes or a common cause. One of the statements may be the effect of the other statement. Read both the statements and select the correct answer.

I. Martial arts like karate emphasize discipline and self-control, teaching practitioners to harness their strength for both defence and personal growth.

II. Karate is being made compulsory in every school.

- Ans**
- ☐ 1. Both I and II are independent causes.
 - ☐ 2. Both I and II are effects of independent causes.
 - ☒ 3. I is the cause and II is its possible effect.
 - ☐ 4. II is the cause and I is its possible effect.

Q.88 The Carriage of Goods by Sea Bill, 2024, was introduced in the Lok Sabha on ____.

- Ans**
- ☒ 1. 9 August 2024
 - ☐ 2. 6 August 2024
 - ☐ 3. 7 August 2024
 - ☐ 4. 8 August 2024

Q.89 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. T is not an immediate neighbour of P. Only 3 people sit between P and R when counted from the right of P. V sits immediately to the left of S. Q sits 2nd to the left of R. Who sits 2nd to the left of T?

- Ans**
- ☒ 1. U
 - ☐ 2. P
 - ☐ 3. V
 - ☐ 4. S

Q.90 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EIM, HLP, KOS, NRV, ?

- Ans**
- ☐ 1. UQY
 - ☐ 2. QYU
 - ☐ 3. UYQ
 - ☒ 4. QUY

Q.91 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DIN, FKP, HMR, JOT, ?

Ans ☒ 1. KOX

☒ 2. KOV

☒ 3. KOU

☒ 4. LQV

Q.92 An object is displaced horizontally because of the applied force. What is revealed by this action?

Ans ☒ 1. Work is done by the force.

☒ 2. The force decreases the mass of the object.

☒ 3. The force increases the inertia of the object.

☒ 4. The force increases the mass of the object.

Q.93 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(15, 5, 10)

(24, 8, 16)

Ans ☒ 1. (39, 13, 26)

☒ 2. (39, 11, 26)

☒ 3. (36, 13, 26)

☒ 4. (39, 13, 24)

Q.94 $\frac{3}{20}$ is what percentage of $\frac{12}{25}$?

Ans ☒ 1. 40.50%

☒ 2. 35.50%

☒ 3. 31.25%

☒ 4. 42.75%

Q.95 $\frac{3-4\sin^2\theta}{\cos^2\theta} + 2\tan^2\theta$

can be simplified as:

Ans ☒ 1. 3

☒ 2. 0

☒ 3. $3\tan^2\theta$

☒ 4. $3 + \tan^2\theta$

Q.96 Namya got married 6 years ago. Now her age is $1\frac{1}{4}$ times her age at the time of marriage. Her son's present age is one-fifth of her present age. Find her son's present age.

Ans ☒ 1. 5 years

☒ 2. 20 years

☒ 3. 12 years

☒ 4. 6 years

Q.97 Identify the INCORRECT statement about complex permanent tissue.

- Ans**
- ☐ 1. Cells in a complex tissue work together to perform a common function.
 - ☒ 2. Complex tissue includes parenchyma and collenchyma.
 - ☐ 3. There is more than one type of cell in a complex tissue.
 - ☐ 4. Vascular bundles are a characteristic feature of complex tissues.

Q.98 The percentage profit earned by James by selling an article for ₹1,920, equals the percentage loss suffered by selling it at ₹1,500. What should be the selling price if he wants to earn 10% profit?

- Ans**
- ☐ 1. ₹2,000
 - ☐ 2. ₹4,000
 - ☐ 3. ₹7,000
 - ☒ 4. ₹1,881

Q.99 A cart is moving with a uniform velocity and a retarding force F is applied in the opposite direction to stop the cart. The work done by the force is:

- Ans**
- ☐ 1. positive
 - ☐ 2. undetermined
 - ☐ 3. zero
 - ☒ 4. negative

Q.100 The Indian government has allocated ₹____ for the National Film Development Corporation in the 2024-25 budget.

- Ans**
- ☐ 1. 16 crore
 - ☐ 2. 46 crore
 - ☒ 3. 23 crore
 - ☐ 4. 36 crore

2024/12/26-23:39:11



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Alambagh Inter College
Test Date	26/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 When Planaria is cut into many pieces each piece grows into a complete organism. What is this known as?

- Ans**
- ☒ 1. Regeneration
 - ☐ 2. Binary fission
 - ☐ 3. Fragmentation
 - ☐ 4. Multiple fission

Q.2 From the four possibilities, suspension has which property?

- Ans**
- ☐ 1. Solid mixture
 - ☐ 2. Plasma mixture
 - ☐ 3. Homogenous mixture
 - ☒ 4. Heterogeneous mixture

Q.3 What happens to the process of diffusion on heating?

- Ans**
- ☒ 1. On heating, diffusion becomes faster.
 - ☐ 2. Diffusion depends on volume of matter.
 - ☐ 3. On heating, diffusion becomes slower.
 - ☐ 4. There is no effect of heating on diffusion.

Q.4 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. GDAX
 - ☐ 2. AXUR
 - ☒ 3. OKJH
 - ☐ 4. KHEB

Q.5 Which modes of reproduction is used by unicellular organisms?

- Ans ☒ 1. Only fission
☐ 2. Budding, regeneration and fission
☐ 3. Only budding
☐ 4. Only regeneration

Q.6 Plaster of Paris is prepared when:

- Ans ☒ 1. gypsum is heated at 373 K and it loses water molecules
☐ 2. ammonia is heated at 373 K and it loses water molecules
☐ 3. soda lime is heated at 373 K and it loses water molecules
☐ 4. brine is heated at 373 K and it loses water molecules

Q.7 Which of the following pairs is an example of a solid state of matter?

- Ans ☐ 1. Juice and milk
☐ 2. Water and oxygen
☐ 3. Oil and sugar
☒ 4. Sugar and sponge

Q.8 Hari purchased 25 kg of wheat at the rate of ₹4 per kg and 35 kg of wheat at ₹4.50 per kg. He sold the mixture at the rate of ₹4.25 per kg. Find his gain or loss.

- Ans ☐ 1. ₹2.00, loss
☐ 2. ₹3.00, profit
☒ 3. ₹2.50, loss
☐ 4. ₹3.50, profit

Q.9 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

329, 472, 615, 758, 901, ?

- Ans ☒ 1. 1044
☐ 2. 1025
☐ 3. 1082
☐ 4. 1068

Q.10 The correct expression of $8.\overline{46}$ in the fractional form is _____.

- Ans ☒ 1. $\frac{838}{99}$
☐ 2. $\frac{83}{99}$
☐ 3. $\frac{846}{99}$
☐ 4. $\frac{84}{99}$

- Q.11** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?
HKN, ILO, JMP, KNQ, ?
- Ans** ☐ 1. LRO
☒ 2. LOR
☐ 3. ORL
☐ 4. OLR
- Q.12** $75 \times 75 + 2 \times 75 \times 25 + 25 \times 25$ is equal to:
- Ans** ☐ 1. 7500
☐ 2. 6250
☒ 3. 10000
☐ 4. 3750
- Q.13** Which of the following Indian Navy personnel received the Shaurya Chakra 2024?
- Ans** ☐ 1. Vice Admiral KK Singh
☒ 2. Capt. Sharad Sinsunwal
☐ 3. Lt. Cdr. Anil Kumar
☐ 4. Commodore Ajay Mehta
- Q.14** A resistor has current flowing through it. If its resistance is halved while the voltage across it is kept constant, what will be the change in current?
- Ans** ☒ 1. It will be doubled.
☐ 2. It will become zero.
☐ 3. It will be halved.
☐ 4. It will remain the same.
- Q.15** How many pairs of sex chromosomes are present in humans?
- Ans** ☒ 1. One pair
☐ 2. Two pairs
☐ 3. Twenty two pairs
☐ 4. Forty six pairs
- Q.16** In a certain code language, 'ARID' is coded as '9078' and 'DIRE' is coded as '8095'. What is the code for 'E' in the given code language?
- Ans** ☒ 1. 5
☐ 2. 8
☐ 3. 9
☐ 4. 0
- Q.17** Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only three boxes are kept above X. Only one box is kept between Z and X. Only three boxes are kept between Z and A. A is kept at some place above X. C is kept immediately below A. L is kept at one of the places above Y. B is not kept immediately above or below Z.
Which box is kept at the lowermost position?
- Ans** ☐ 1. B
☒ 2. Y
☐ 3. C
☐ 4. Z

Q.18 If a person covers 60 km at a speed of 40 km/h and another distance of 120 km at a speed of 80 km/h, then his average speed for the whole journey is:

- Ans**
- ☒ 1. 50 km/h
 - ☒ 2. 60 km/h
 - ☐ 3. 55 km/h
 - ☐ 4. 48 km/h

Q.19 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 3 4 8 5 6 9 2 2 1 6 6 9 3 2 4 8 9 1 6 8 3 2 2 3 8 3 2 1 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 2
 - ☐ 2. 0
 - ☐ 3. 3
 - ☐ 4. 1

Q.20 In an election between two candidates, one candidate got 40% of total votes and yet lost by 1000 votes. If all the votes polled were valid, then the total number of votes cast in the election was:

- Ans**
- ☐ 1. 10,000
 - ☐ 2. 8000
 - ☐ 3. 6000
 - ☒ 4. 5000

Q.21 Which of the following is a reflex action?

- Ans**
- ☐ 1. Walking on the street
 - ☒ 2. Pulling hand from the flame
 - ☐ 3. Dancing on the stage
 - ☐ 4. Talking to a child

Q.22 Evaluate the given expression.

$$3 - (5 - 6 \div 3)$$

- Ans**
- ☐ 1. 1
 - ☒ 2. 0
 - ☐ 3. 3
 - ☐ 4. 2

Q.23 Find the simple interest on ₹700 at 9% per month in 7 months.

- Ans**
- ☒ 1. ₹441
 - ☐ 2. ₹461
 - ☐ 3. ₹464
 - ☐ 4. ₹444

Q.24 Transparency International's Corruption Perceptions Index ranked India ____ out of 180 countries, indicating a persistent struggle with public sector corruption.

- Ans**
- ✓ 1. 93rd
 - ✗ 2. 103rd
 - ✗ 3. 73rd
 - ✗ 4. 83rd

Q.25 Study the following table and answer the question.

The table depicts the number of oranges sold by shops A and B to males and females on Monday

Shops	Number of oranges sold to males	Number of oranges sold to females
A	21	26
B	39	37

What is the difference between the number of oranges sold by shops A and B to males?

- Ans**
- ✗ 1. 2
 - ✗ 2. 15
 - ✓ 3. 18
 - ✗ 4. 11

Q.26 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 7 6 3 9 5 4 4 8 6 4 8 8 9 6 9 2 2 6 3 1 5 5 3 5 1 5 5 0 3 4 (Right)

What is the sum of the 15th digit from the left and the 11th digit from the right?

- Ans**
- ✗ 1. 7
 - ✗ 2. 11
 - ✓ 3. 10
 - ✗ 4. 12

Q.27 The perimeter of a rhombus is 100 cm and one of the diagonals is 40 cm. Then the area of the rhombus is

- Ans**
- ✗ 1. 1200 cm²
 - ✗ 2. 1000 cm²
 - ✗ 3. 500 cm²
 - ✓ 4. 600 cm²

Q.28 Charge on how many electrons is equivalent to 1 coulomb of electric charge?

- Ans**
- ✗ 1. 9.1×10^{31}
 - ✗ 2. 1.6×10^{19}
 - ✗ 3. 4.2×10^{16}
 - ✓ 4. 6×10^{18}

Q.29 Which of the following sentences is correct if an object is in uniform motion?

Ans ☒ 1. The object travels with different acceleration.

☒ 2. 

☒ 3. The object moves with a constant speed.

☒ 4. The object moves with varying speeds.

Q.30 Which of the following pairs has the same unit?

Ans ☒ 1. (i) Energy and (ii) Inertia

☒ 2. (i) Force and (ii) Work

☒ 3. (i) Force and (ii) Inertia

☒ 4. (i) Work and (ii) Energy

Q.31 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 36 :: 15 : Y

Ans ☒ 1. X = 12, Y = 50

☒ 2. X = 9, Y = 42

☒ 3. X = 12, Y = 60

☒ 4. X = 9, Y = 60

Q.32 What is the strength of the magnetic field found inside a current carrying solenoid?

Ans ☒ 1. More at the ends than at the centre

☒ 2. Same at all points

☒ 3. Minimum in the middle

☒ 4. Found to increase from one end to the other

Q.33 How many spherical solid marbles, each having a radius of 0.2 cm, can be made from a solid sphere having a radius of 6 cm?

Ans ☒ 1. 18000

☒ 2. 21000

☒ 3. 27000

☒ 4. 9000

Q.34 MILH is related to KGJF in a certain way based on the English alphabetical order. In the same way, QMPL is related to OKNJ. To which of the following options is TPSO related, following the same logic?

Ans ☒ 1. NRQM

☒ 2. RNQM

☒ 3. RNMQ

☒ 4. NRMQ

Q.35 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. DG-BE
 - ☐ 2. IL-GJ
 - ☒ 3. NQ-LP
 - ☐ 4. FI-DG

Q.36 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '-', what will come in place of the question mark '?' in the following equation?

$$4\ C\ 8\ D\ 9\ A\ 3\ B\ 2 = ?$$

- Ans**
- ☐ 1. 8
 - ☒ 2. 6
 - ☐ 3. 5
 - ☐ 4. 3

Q.37 Which of the following statements is true for an ionic compound?

- Ans**
- ☐ 1. In an ionic compound, the transfer of electrons takes place from a metal to a metal.
 - ☒ 2. In an ionic compound, the transfer of electrons takes place from a metal to a non-metal.
 - ☐ 3. In an ionic compound, the transfer of electrons takes place from a non-metal to a metal.
 - ☐ 4. In an ionic compound, the transfer of electrons takes place from a non-metal to a non-metal.

Q.38 In which of the following months was the Project PARI (Public Art of India) initiated?

- Ans**
- ☒ 1. July 2024
 - ☐ 2. October 2024
 - ☐ 3. September 2024
 - ☐ 4. August 2024

Q.39 The difference between the ages of two siblings is 7 years. If the sum of their ages is 21 years, how old is the elder of the siblings?

- Ans**
- ☐ 1. 7 years
 - ☒ 2. 14 years
 - ☐ 3. 10 years
 - ☐ 4. 3 years

Q.40 In November 2024, India sent a formal Letter of Intent to the International Olympic Committee to host the Olympics and Paralympics in which of the following years?

- Ans**
- ☒ 1. 2036
 - ☐ 2. 2034
 - ☐ 3. 2033
 - ☐ 4. 2035

Q.41 Which city was identified as the most polluted in 2023 according to the Sixth Annual World Air Quality Report?

- Ans**
- ☐ 1. Mumbai
 - ☒ 2. Begusarai
 - ☐ 3. Delhi
 - ☐ 4. Kolkata

Q.42 In September 2024, Prime Minister Modi launched how many Param Rudra Super Computing Systems and a High Performance Computing (HPC) system for weather and climate research?

- Ans**
- ☐ 1. 7
 - ☐ 2. 5
 - ☐ 3. 2
 - ☒ 4. 3

Q.43 If $3.2 : x :: x : 16.2$, and $x > 0$, then find the value of x .

- Ans**
- ☐ 1. 6.3
 - ☐ 2. 9.7
 - ☒ 3. 7.2
 - ☐ 4. 5.4

Q.44 Which phenomenon is responsible for the twinkling of a star?

- Ans**
- ☐ 1. Total internal reflection
 - ☐ 2. Reflection
 - ☒ 3. Atmospheric refraction
 - ☐ 4. Scattering

Q.45 Which of the following pairs is INCORRECTLY matched according to mode of reproduction?

- Ans**
- ☐ 1. Hydra – Budding
 - ☐ 2. Spirogyra – Fragmentation
 - ☒ 3. Bryophyllum – Spore formation
 - ☐ 4. Amoeba – Binary fission

Q.46 The average of ten numbers is 7. If 21 is added to each number, then the average of the new set of numbers will be:

- Ans**
- ☐ 1. 19
 - ☐ 2. 31
 - ☐ 3. 7
 - ☒ 4. 28

Q.47 Which single-celled organism divides into many daughter cells simultaneously by multiple fission?

- Ans**
- ☒ 1. Plasmodium
 - ☐ 2. Yeast
 - ☐ 3. Leishmania
 - ☐ 4. Amoeba

Q.48 SOTQ is related to PLQN in a certain way based on the English alphabetical order. In the same way, OKPM is related to LHMJ. To which of the following options is LHMJ related, following the same logic?

- Ans**
- ☐ 1. EIGJ
 - ☐ 2. IEGJ
 - ☐ 3. EIJG
 - ☒ 4. IEJG

Q.49 Who among the following received the 2024 Padma Bhushan award for Literature and Education-Journalism?

- Ans**
- ☐ 1. Ram Naik
 - ☒ 2. Hormusji N Cama
 - ☐ 3. Pyarelal Sharma
 - ☐ 4. Ashwin B Mehta

Q.50 The mass number of sulphur atom is:

- Ans**
- ☐ 1. 31
 - ☒ 2. 32
 - ☐ 3. 37
 - ☐ 4. 35.5

Q.51 Which of the following are parts of the peripheral nervous system?

- Ans**
- ☒ 1. Both cranial and spinal nerves
 - ☐ 2. Only cranial nerves
 - ☐ 3. Neither cranial nor spinal nerves
 - ☐ 4. Only spinal nerves

Q.52 Two numbers are in the ratio 4 : 1. If difference between the numbers is 54, then find the greater number.

- Ans**
- ☐ 1. 90
 - ☐ 2. 42
 - ☐ 3. 56
 - ☒ 4. 72

Q.53 According to the Newton's third law of motion, to every action:

- Ans**
- ☒ 1. there is an equal and opposite reaction and they act on two different bodies
 - ☐ 2. there is an equal and perpendicular reaction and they act on two different bodies
 - ☐ 3. there is an unequal and opposite reaction and they act on the same body
 - ☐ 4. there is an equal and opposite reaction and they act on the same body

Q.54 If $4 \times 4^{(n+5)} = 256$, then the value of $5^{(n+4)}$ is:

- Ans**
- ☒ 1. 25
 - ☐ 2. 5
 - ☐ 3. 125
 - ☐ 4. 1

Q.55 CH_3OH , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_3\text{H}_7\text{OH}$ and $\text{C}_4\text{H}_9\text{OH}$ compounds exhibit almost similar chemical properties because they belong to:

- Ans**
- ☐ 1. a periodic series
 - ☐ 2. an electrochemical series
 - ☐ 3. a heterologous series
 - ☒ 4. a homologous series

Q.56 How many prime numbers are there between 1 and 50?

- Ans**
- ☐ 1. 14
 - ☒ 2. 15
 - ☐ 3. 16
 - ☐ 4. 13

Q.57 Pipe A, pipe B and pipe C together can fill a tank in 20 minutes, but because of the leak all three pipes take 10 minutes more time to fill the tank completely. Find the time in which leak can empty the full tank.

- Ans**
- ☐ 1.
 - ☐ 2. 40 min
 - ☒ 3. 60 min
 - ☐ 4. 30 min

Q.58 Three pipes A, B and C are opened to fill a tank such that B and C can fill the tank alone for 18 hours and 12 hours, respectively, while pipe A can empty a fully filled tank in 15 hours. All the three pipes are opened together, and after 5 hours pipe A is closed. In how many hours will the remaining tank be filled?

- Ans**
- ☐ 1. 2 hours 50 minutes
 - ☐ 2. 1 hour 45 minutes
 - ☐ 3. 1 hour 15 minutes
 - ☒ 4. 4 hours 36 minutes

Q.59 Who among the following received the Major Dhyan Chand Khel Ratna Award 2023 from the Indian President in January 2024?

- Ans**
- ☐ 1. Shri Mohammed Shami
 - ☒ 2. Shri Chirag Chandrashekhhar Shetty
 - ☐ 3. Ms. Aditi Gopichand Swami
 - ☐ 4. Shri Ojas Pravin Deotale

Q.60 As per the 10th consecutive Monetary Policy Committee (MPC) meeting, what is the repo rate at which the Reserve Bank of India lends to banks as on 30th October 2024?

- Ans**
- ☐ 1. 7.5%
 - ☐ 2. 6.0%
 - ☒ 3. 6.5%
 - ☐ 4. 7.0%

Q.61 In which of the following organisms is spore formation seen?

- Ans**
- ☐ 1. Paramecium
 - ☒ 2. Rhizopus
 - ☐ 3. Plasmodium
 - ☐ 4. Amoeba

Q.62 Which of the following is/are related to the practical applications of electricity in daily life?

- (A) Electric oven.
- (B) Electric laundry iron.
- (C) Solar water heater

Ans ✓ 1. 

- ✗ 2. Only (A) and (C)
- ✗ 3. (A), (B) and (C)
- ✗ 4. Only (B) and (C)

Q.63 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$16 - 2 + 5 \div 12 \times 2 = ?$$

Ans ✓ 1. 30

- ✗ 2. 25
- ✗ 3. 45
- ✗ 4. 18

Q.64 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 5 1 9 4 7 7 1 4 4 1 2 8 5 4 2 6 0 3 2 2 9 3 5 4 4 6 4 5 4 7 (Right)

What is the sum of the 10th digit from the left and the 12th digit from the right?

Ans ✗ 1. 1

- ✗ 2. 4
- ✗ 3. 2
- ✓ 4. 3

Q.65 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All onions are tomatoes.

Some tomatoes are potatoes.

Conclusions:

I. At least some tomatoes are onions.

II. Some onions are potatoes.

Ans ✗ 1. Only conclusion II follows

- ✗ 2. Both conclusions I and II follow
- ✗ 3. Neither conclusion I nor II follows
- ✓ 4. Only conclusion I follows

Q.66 Addition of 22 kg 589 g and 19 kg 678 g results in:

Ans ✗ 1. 42 kg 367 g

- ✗ 2. 41 kg 267 g
- ✓ 3. 42 kg 267 g
- ✗ 4. 41 kg 367 g

Q.67 Which of the following phenomena is used to liquefy gas?

- Ans
- ☐ 1. Applying pressure and increasing temperature
 - ☐ 2. Reducing pressure and reducing temperature
 - ☒ 3. Applying pressure and reducing temperature
 - ☐ 4. Applying temperature and reducing pressure

Q.68 Which of the following has the highest basicity?

- Ans
- ☐ 1. Saliva
 - ☐ 2. Blood
 - ☒ 3. Sodium hydroxide
 - ☐ 4. Tap water

Q.69 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CFI, KNQ, SVY, ADG, ?

- Ans
- ☐ 1. IKM
 - ☐ 2. JLN
 - ☒ 3. ILO
 - ☐ 4. JMP

Q.70 The SI unit of force is:

- Ans
- ☐ 1. rad/s
 - ☐ 2. m/s
 - ☐ 3. Dyne
 - ☒ 4. Newton

Q.71 The lengths of the diagonals of a rhombus are 10 cm and 24 cm. The length of the side of the rhombus is:

- Ans
- ☒ 1. 13 cm
 - ☐ 2. 10 cm
 - ☐ 3. 8 cm
 - ☐ 4. 9 cm

Q.72 In 1987, the UNEP succeeded in forging an agreement to freeze Chlorofluorocarbons production at 1986 levels. What is the full form of UNEP?

- Ans
- ☐ 1. United Nations Environment Policy
 - ☐ 2. United Nations Ecological Policy
 - ☒ 3. United Nations Environment Programme
 - ☐ 4. United Nations Ecological Programme

Q.73 How does resistance depend on the cross-sectional area A of a conductor?

- Ans
- ☐ 1. Proportional to A^2
 - ☒ 2. Inversely proportional to A
 - ☐ 3. Does not depend on A
 - ☐ 4. Proportional to A

Q.74 During a chemical reaction, 10 grams of substance A reacts with 15 grams of substance B to produce a new compound. According to the law of conservation of mass, what will be the total mass of the products?

- Ans**
- ☐ 1. 10 g
 - ☐ 2. 11 g
 - ☒ 3. 25 g
 - ☐ 4. 16 g

Q.75 A student has to secure 40% marks to pass. He gets 178 marks and fails by 22 marks. The maximum marks is:

- Ans**
- ☒ 1. 500
 - ☐ 2. 1000
 - ☐ 3. 200
 - ☐ 4. 800

Q.76 An object floats on a liquid if the density of the object is:

- Ans**
- ☐ 1. greater than the density of the liquid
 - ☐ 2. equal to the density of the liquid
 - ☐ 3. exactly twice the density of the liquid
 - ☒ 4. less than the density of the liquid

Q.77 Which of the following is/are correct with regard to the technique of plants to get rid of waste material?

- A. Plants get rid of excess water by transpiration.
- B. Waste products may be stored in leaves that fall off.
- C. Waste products are stored as resins and gums, especially in old xylem.

- Ans**
- ☐ 1. Both A and B
 - ☐ 2. Both A and C
 - ☐ 3. Both B and C
 - ☒ 4. A, B and C

Q.78 What kind of energy is possessed by a moving bullet?

- Ans**
- ☐ 1. Light energy
 - ☒ 2. Kinetic energy
 - ☐ 3. Electrical energy
 - ☐ 4. Potential energy

Q.79 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only L sits between A and P. P sits third to the left of E. G sits to the immediate left of E. B is not an immediate neighbour of P. Who sits fourth to the left of M?

- Ans**
- ☐ 1. L
 - ☒ 2. B
 - ☐ 3. E
 - ☐ 4. A

Q.80 Which of the following plant hormones helps in promoting growth?

- Ans**
- ☐ 1. Gibberellins, Cytokinins and Absciscic acid
 - ☒ 2. Auxin, Cytokinins and Gibberellins
 - ☐ 3. Auxin, Absciscic acid and Gibberellins
 - ☐ 4. Auxin, Cytokinins and Absciscic acid

Q.81 A single cell may constitute a whole organism in all of the following, EXCEPT:

- Ans**
- ☐ 1. Chlamydomonas
 - ☒ 2. Rhizopus
 - ☐ 3. bacteria
 - ☐ 4. amoeba

Q.82 What is the unit of electro motive force (EMF)?

- Ans**
- ☐ 1. Sec
 - ☒ 2. Volt
 - ☐ 3. Ampere
 - ☐ 4. Newton

Q.83 A trader marks his goods 25% above the cost price and allows a discount of 10% on them. His gain percentage is:

- Ans**
- ☐ 1. 15%
 - ☐ 2. 10%
 - ☐ 3. 20%
 - ☒ 4. 12.5%

Q.84 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(18, 6, 24)

(27, 9, 36)

- Ans**
- ☐ 1. (33, 11, 42)
 - ☐ 2. (31, 11, 44)
 - ☐ 3. (33, 10, 44)
 - ☒ 4. (33, 11, 44)

Q.85 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. Only 1 person sits between V and T when counted from the right of V. Q and R are both immediate neighbours of U. S is not an immediate neighbour of T. Only 1 person sits between P and R when counted from the left of R. Who sits third to the left of U?

- Ans**
- ☒ 1. P
 - ☐ 2. T
 - ☐ 3. S
 - ☐ 4. V

Q.86 How long will it take for ₹1,500 to become ₹2,040 at 6% per annum simple interest?

- Ans**
- ☐ 1. $5\frac{3}{4}$ years
 - ☒ 2. 6 years
 - ☐ 3. 4 years
 - ☐ 4. $4\frac{1}{2}$ years

Q.87 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some plates are glasses.

Some glasses are bowls.

Some bowls are cups.

Conclusions:

(I) Some cups are glasses.

(II) Some bowls are plates.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☒ 2. Neither conclusion (I) nor (II) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☐ 4. Only conclusion (I) follows.

Q.88 In a certain code language, 'happy children play' is coded as 'ha ch pl', and 'children love toys' is coded as 'ch lo tk'. What is the code for 'children' in the given code language?

- Ans**
- ☐ 1. Lo
 - ☐ 2. ha
 - ☒ 3. ch
 - ☐ 4. pl

Q.89 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

Air quality in City A has significantly deteriorated over the last decade due to increased industrial emissions.

Courses of Action:

- I. Authorities of City A should implement strict emission control regulations for industries in the city.
- II. The industries should distribute face masks to the residents of City A to protect them from the poor air quality.

- Ans**
- ☐ 1. Both I and II follow
 - ☐ 2. Neither I nor II follows
 - ☐ 3. Only II follows
 - ☒ 4. Only I follows

Q.90 If 7, 11, 21 and k are in proportion, the value of k is:

- Ans**
- ☒ 1. 33
 - ☐ 2. 42
 - ☐ 3. 45
 - ☐ 4. 28

Q.91 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta - \cos \theta$ is _____. (θ lies in first quadrant)

- Ans**
- ☐ 1. -1
 - ☐ 2. $4\sin\theta\cos\theta$
 - ☐ 3. $\sec^2 \theta$
 - ☒ 4. 0

Q.92 Visitors to a show were charged ₹15 each on the first day, ₹7.50 on the second day, and ₹2.50 on the third day, and total attendance on the three days was in ratio 2 : 5 : 13, respectively. The average charge per person for the whole show is:

- Ans**
- ☒ 1. ₹5
 - ☐ 2. ₹6
 - ☐ 3. ₹3
 - ☐ 4. ₹4

Q.93 After fertilisation, which of the following is formed when the zygote divides several times within the ovule?

- Ans**
- ☐ 1. Stamen
 - ☐ 2. Pollen grain
 - ☐ 3. Pistil
 - ☒ 4. Embryo

Q.94 Shakti starts from Point A and drives 22 km towards South. He then takes a left turn, drives 20 km, turns left and drives 12 km. He then takes a left turn and drives 17 km. He takes a final right turn, drives 10 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 3 km towards South
 - ☒ 2. 3 km towards West
 - ☐ 3. 2 km towards East
 - ☐ 4. 4 km towards North

Q.95 The Public Examinations (Prevention of Unfair Means) Bill, 2024, proposes a minimum fine of ____ for those involved in organised crimes of cheating.

- Ans**
- ☐ 1. ₹10 Lakh
 - ☐ 2. ₹20 Lakh
 - ☒ 3. ₹1 Crore
 - ☐ 4. ₹50 Lakh

Q.96 Which of the following is NOT a subatomic particle?

- Ans**
- ☐ 1. Proton
 - ☐ 2. Neutron
 - ☐ 3. Electron
 - ☒ 4. Molecule

Q.97 Which of the following is true about nuclear membranes and other cell organelles in cells?

- Ans
- ☐ 1. The nuclear membrane is present in prokaryotic cells.
 - ☒ 2. The nuclear membrane is absent in prokaryotic cells.
 - ☐ 3. The nuclear membrane is absent in eukaryotic cells.
 - ☐ 4. All cytoplasmic organelles are present in prokaryotic cells.

Q.98 Which of the following is/are termed as nucleons?

- Ans
- ☐ 1. Only neutrons
 - ☐ 2. Only protons
 - ☒ 3. Both protons and neutrons
 - ☐ 4. Only electrons

Q.99 In chemical industries, bleaching powder is used as:

- Ans
- ☐ 1. a dehydrating agent
 - ☐ 2. a fire extinguisher
 - ☐ 3. a reducing agent
 - ☒ 4. an oxidising agent

Q.100 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is Q related to S if 'Q x R - S + T ÷ U'?

- Ans
- ☒ 1. Husband's mother
 - ☐ 2. Sister
 - ☐ 3. Mother
 - ☐ 4. Daughter

2024/12/27-10:59:00



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Om Sri Sai Buddhi Siddhi
Test Date	26/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Seven people, A, B, D, L, X, Y and Z, are sitting in a row, facing north. No one sits to the left of B. Only four people sit between B and Y. Only three people sit to the right of Z. A sits to the immediate left of L. D is not an immediate neighbour of Z. Who sits at the rightmost end of the line?

- Ans**
- ☒ 1. X
 - ☒ 2. L
 - ☒ 3. D
 - ☒ 4. Y

Q.2 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 1 8 4 5 9 6 5 2 4 8 0 9 5 9 5 7 9 5 3 3 5 1 5 1 4 7 6 6 4 9 (Right)

How many such odd digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an even digit?

- Ans**
- ☒ 1. 0
 - ☒ 2. 3
 - ☒ 3. 4
 - ☒ 4. 2

Q.3 Which state was crowned the team champion at the 4th National Finswimming Championship, 2024?

- Ans**
- ☒ 1. West Bengal
 - ☒ 2. Tamil Nadu
 - ☒ 3. Maharashtra
 - ☒ 4. Karnataka

Q.4 Spirogyra a multi-cellular organism simply breaks up into smaller pieces upon maturation and these pieces or fragments grow into new individuals. Such a mode of reproduction is known as:

- Ans**
- ☒ 1. regeneration
 - ☒ 2. budding
 - ☒ 3. fragmentation
 - ☒ 4. binary fission

Q.5 If u , g , and h are the initial velocity, gravitational acceleration, and height, respectively, of an object falling under gravitational force, then its final velocity v can be obtained from:

- Ans**
- ☐ 1. $v^2/u^2 = 2gh$
 - ☐ 2. $v^2 + u^2 = 2gh$
 - ☒ 3. $v^2 - u^2 = 2gh$
 - ☐ 4. $v^2u^2 = 2gh$

Q.6 25% of 30% of 45% of 1 is equal to:

- Ans**
- ☐ 1. 0.3375
 - ☒ 2. 0.03375
 - ☐ 3. 33.75
 - ☐ 4. 3.375

Q.7 OTRP is related to UZ XV in a certain way based on the English alphabetical order. In the same way, HM KI is related to NS QO. To which of the following options is MR PN related, following the same logic?

- Ans**
- ☐ 1. XSTV
 - ☒ 2. SXVT
 - ☐ 3. SXTV
 - ☐ 4. XSVT

Q.8 Which of the following correctly describes the sum of kinetic energy and potential energy of an object?

- Ans**
- ☒ 1. Total mechanical energy
 - ☐ 2. Total thermal energy
 - ☐ 3. Total electrical energy
 - ☐ 4. Total chemical energy

Q.9 A shopkeeper provides successive discounts of 7% and 2%, which are equivalent to a single discount of ____.

- Ans**
- ☐ 1. 9%
 - ☒ 2. 8.86%
 - ☐ 3. 8%
 - ☐ 4. 9.14%

Q.10 Find the volume of a sphere whose diameter is 6 cm.

- Ans**
- ☐ 1. $42\pi \text{ cm}^3$
 - ☐ 2. $48\pi \text{ cm}^3$
 - ☐ 3. $28\pi \text{ cm}^3$
 - ☒ 4. $36\pi \text{ cm}^3$

Q.11 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find A's share.

- Ans**
- ☐ 1. ₹240
 - ☐ 2. ₹360
 - ☒ 3. ₹480
 - ☐ 4. ₹160

Q.12 Simplify the given expression.

$$(6 + 4) \div 2 - 2 + 6 \times 4$$

Ans ☒ 1. 27

☐ 2. 21

☐ 3. 44

☐ 4. 36

Q.13 Six boxes G, H, I, J, K and L are kept one over the other but not necessarily in the same order. G is kept third from the bottom. Only two boxes are kept between G and H. Only three boxes are kept between H and I. J is kept immediately above G. K is kept immediately below I.

Q. How many boxes are kept between H and L?

Ans ☒ 1. Zero

☐ 2. Three

☐ 3. Two

☐ 4. One

Q.14 The 25th edition of the Hornbill Festival was held in which state?

Ans ☒ 1. Nagaland

☐ 2. Manipur

☐ 3. Assam

☐ 4. Meghalaya

Q.15 The average of ten numbers is 7. If each number is multiplied by 12, then the average of the new set of numbers will be:

Ans ☐ 1. 19

☐ 2. 82

☐ 3. 7

☒ 4. 84

Q.16 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(23, 47, 85)

(11, 20, 46)

Ans ☐ 1. (9, 16, 42)

☐ 2. (8, 7, 35)

☐ 3. (21, 15, 50)

☒ 4. (17, 6, 38)

Q.17 During the decomposition reaction of lead nitrate, the observed brown colour fumes are of which gas?

Ans ☐ 1. Nitrogen gas

☐ 2. Hydrogen gas

☒ 3. Nitrogen dioxide gas

☐ 4. Ozone gas

Q.18 Which metal pair starts to melt at room temperature?

- Ans**
- ☐ 1. Copper and cobalt
 - ☐ 2. Zinc and copper
 - ☐ 3. Iron and nickel
 - ☒ 4. Gallium and cesium

Q.19 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some lakes are rivers.

Some rivers are ponds.

Conclusions:

(I) Some lakes are ponds.

(II) Some ponds are not rivers.

- Ans**
- ☒ 1. Neither conclusion I nor II follows
 - ☐ 2. Both conclusions I and II follow
 - ☐ 3. Only conclusion II follows
 - ☐ 4. Only conclusion I follows

Q.20 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

RM-HL-OQ

NI-DH-KM

- Ans**
- ☐ 1. QK-FJ-MN
 - ☐ 2. QK-FI-MO
 - ☒ 3. PK-FJ-MO
 - ☐ 4. PK-FI-MN

Q.21 Which of the following energies reflect mechanical energy when combined?

- Ans**
- ☐ 1. Heat energy and light energy
 - ☒ 2. Potential energy and kinetic energy
 - ☐ 3. Chemical energy and electrical energy
 - ☐ 4. Light energy and chemical energy

Q.22 Which of the following is an isobar of argon?

- Ans**
- ☐ 1. Potassium
 - ☐ 2. Chlorine
 - ☐ 3. Sodium
 - ☒ 4. Calcium

Q.23 First find the median of 46, 64, 87, 41, 58, 77, 35, 90, 55, 92, and 33. If 92 is replaced with 99 and 41 is replaced with 43 in the data, then find the new median. What is the difference between the old median and the new median?

- Ans**
- ☐ 1. 3
 - ☒ 2. 0
 - ☐ 3. 6
 - ☐ 4. 2

Q.24 In a certain code language,

'A + B' means 'A is the mother of B',

'A - B' means 'A is the son of B',

'A x B' means 'A is the husband of B'

and 'A ÷ B' means 'A is the brother of B'.

How is O related to Q if 'M + N ÷ O x P + Q'?

- Ans**
- ☐ 1. Brother
 - ☐ 2. Father's brother
 - ☒ 3. Father
 - ☐ 4. Son

Q.25 Gitika borrowed a sum of ₹20,000 at a certain rate of simple interest for 2 years. If she paid an interest of ₹4,000 at the end of the period, then find the rate of interest per annum.

- Ans**
- ☐ 1. 15%
 - ☒ 2. 10%
 - ☐ 3. 20%
 - ☐ 4. 25%

Q.26 The Indian National Trust for Art and Cultural Heritage (INTACH) Research Programme for 2025 is divided into how many categories?

- Ans**
- ☐ 1. Two
 - ☒ 2. Three
 - ☐ 3. Five
 - ☐ 4. Four

Q.27 In a certain code language, 'Come Back Home' is written as 'Tu Ru Qu' and 'She Went Back' is written as 'Du Su Ru' and 'He Went Home' is written as 'Pu Tu Du'. How is 'She' written in the given language?

- Ans**
- ☐ 1. Du
 - ☒ 2. Su
 - ☐ 3. Tu
 - ☐ 4. Ru

Q.28 How much time will a train of length 200 m, moving at a speed of 72 km/h take to cross another train of length 300 m completely, moving at 36 km/h in the same direction?

- Ans**
- ☐ 1. 100 sec
 - ☐ 2. 55 sec
 - ☒ 3. 50 sec
 - ☐ 4. 25 sec

Q.29 The central nervous system that receives information from all parts of the body and integrates it is constituted by:

- Ans**
- ☐ 1. only the heart
 - ☐ 2. only the brain
 - ☐ 3. only the spinal cord
 - ☒ 4. the brain and the spinal cord

Q.30 In a certain code language, 'green leaves rustling' is coded as 'sa ka ta', and 'leaves are fresh' is coded as 'ka da na'. What is the code for 'leaves' in the given code language?

- Ans**
- ☐ 1. da
 - ☐ 2. na
 - ☒ 3. ka
 - ☐ 4. sa

Q.31 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. OQ - NS
 - ☐ 2. MO - LP
 - ☐ 3. GI - FJ
 - ☐ 4. TV - SW

Q.32 If $\tan \theta + \cot \theta = 21$, then find the value of $6\tan^2 \theta + 6\cot^2 \theta$.

- Ans**
- ☒ 1. 2634
 - ☐ 2. 439
 - ☐ 3. 2636
 - ☐ 4. 441

Q.33 What is the calculated molecular mass of oxygen?

- Ans**
- ☐ 1. 30
 - ☒ 2. 32
 - ☐ 3. 28
 - ☐ 4. 26

Q.34 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GFC, KJE, ONG, SRI, ?

- Ans**
- ☐ 1. XYK
 - ☒ 2. WVK
 - ☐ 3. WXL
 - ☐ 4. WXM

Q.35 The Waqf (Amendment) Bill, 2024, introduced in the Indian Lok Sabha on 8 August 2024, aims to repeal which of the following Acts?

- Ans**
- ☐ 1. Mussalman Wakf Act, 1926
 - ☒ 2. Mussalman Wakf Act, 1923
 - ☐ 3. Mussalman Wakf Act, 1924
 - ☐ 4. Mussalman Wakf Act, 1925

Q.36 The sum of two positive numbers is 45 and their difference is 19. What are the numbers?

Ans ✓ 1. 32, 13

✗ 2. 30, 15

✗ 3. 25, 20

✗ 4. 31, 15

Q.37 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The literacy rate in Country X is significantly lower than the global average due to a lack of access to quality education, especially in rural areas.

Courses of Action:

I. Construct more schools and educational facilities in rural areas of Country X to improve accessibility.

II. Develop a digital education platform to provide online learning resources to students in both urban and rural areas of the country.

Ans ✗ 1. Neither I nor II follows.

✗ 2. Only II follows.

✓ 3. Both I and II follow.

✗ 4. Only I follows.

Q.38 Simplify the given expression.

$$5 - [4 - \{3 - (3 - 3 - 6)\}]$$

Ans ✗ 1. 4

✗ 2. 0

✓ 3. 10

✗ 4. 6

Q.39 The acceleration due to gravity on an object of mass m placed near the surface of the earth is:

Ans ✓ 1. independent of m

✗ 2. linearly proportional to m

✗ 3. inversely proportional to m

✗ 4. linearly proportional to m^2

Q.40 Select the correct option related to the function of auxin in plants.

Ans ✓ 1. Helps the cells to grow longer

✗ 2. Induce flowering

✗ 3. Increases stem width

✗ 4. Make plants insect resistant

Q.41 What will come in the place of '?' in the following equation, if '×' and '−' are interchanged and '÷' and '+' are interchanged?

$$55 \times 45 + 5 - 8 \div 4 = ?$$

- Ans**
- ☐ 1. 47
 - ☐ 2. 77
 - ☐ 3. 17
 - ☒ 4. -13

Q.42 Which of the following would increase the resistance of a metallic conductor?

- Ans**
- ☐ 1. Using a material with higher conductivity.
 - ☐ 2. Decreasing its length.
 - ☐ 3. Decreasing the current flowing through the conductor.
 - ☒ 4. Decreasing its area of cross-section.

Q.43 What is the sum of the first 10 prime numbers?

- Ans**
- ☐ 1. 131
 - ☐ 2. 111
 - ☒ 3. 129
 - ☐ 4. 101

Q.44 If 'K' stands for '×', 'L' stands for '−', 'M' stands for '÷' and 'N' stands for '+', what will come in place of the question mark '?' in the following equation?

$$9 \text{ M } 3 \text{ K } 13 \text{ N } 3 \text{ L } 23 = ?$$

- Ans**
- ☐ 1. 14
 - ☐ 2. 24
 - ☒ 3. 19
 - ☐ 4. 29

Q.45 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only three people sit between P and E when counted from the left of P. Only three people sit between M and A when counted from the right of A. L sits to the immediate right of M. G is an immediate neighbour of A as well as E. Who sits to the second to the left of B?

- Ans**
- ☐ 1. A
 - ☒ 2. G
 - ☐ 3. P
 - ☐ 4. L

Q.46 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

IUF, LVJ, OWN, RXR, ?

- Ans**
- ☐ 1. VYX
 - ☐ 2. VYU
 - ☒ 3. UYV
 - ☐ 4. USV

Q.47 Which of the following metal catches fire if kept in open?

- Ans
- ☐ 1. Copper
 - ☐ 2. Zinc
 - ☒ 3. Sodium
 - ☐ 4. Magnesium

Q.48 If $a + \frac{1}{a} = 4$, then $a^2 + \frac{1}{a^2} = ?$

- Ans
- ☐ 1. 18
 - ☒ 2. 14
 - ☐ 3. 16
 - ☐ 4. 12

Q.49 Which of the following statements is/are INCORRECT related to excretion in human being?

- (i) In human beings, kidney is located in the thoracic region.
- (ii) Urine is stored in the urinary bladder.
- (iii) CO_2 is removed from the blood into the lungs.

- Ans
- ☐ 1. (i), (ii) and (iii)
 - ☒ 2. Only (i)
 - ☐ 3. Only (i) and (iii)
 - ☐ 4. Only (i) and (ii)

Q.50 The rate of diffusion of liquids is higher than that of solids because:

- Ans
- ☐ 1.
in the liquid state, particles do not move freely, but have greater space between each other
 - ☐ 2.
in the liquid state, particles do not move freely and do not have greater space between each other
 - ☐ 3.
in the liquid state, particles only move freely and do not have greater space between each other
 - ☒ 4. in the liquid state, particles move freely and have greater space between each other

Q.51 In which of the following types of reaction is there an exchange of ions between the reactants?

- Ans
- ☒ 1. Double displacement reaction
 - ☐ 2. Decomposition
 - ☐ 3. Addition reaction
 - ☐ 4. Disproportion reaction

Q.52 In August 2024, which state became the first in India to provide a Unified Pension Scheme to its employees?

- Ans
- ☒ 1. Maharashtra
 - ☐ 2. Odisha
 - ☐ 3. Uttar Pradesh
 - ☐ 4. Himachal Pradesh

Q.53 As the temperature increases, the kinetic energy of particles of matter _____.

- Ans**
- ☒ 1. increases
 - ☐ 2. becomes zero
 - ☐ 3. decreases
 - ☐ 4. remains the same

Q.54 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 9 8 9 7 2 3 9 8 7 2 1 5 5 8 7 9 3 5 3 1 4 6 4 4 9 7 4 7 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 4
 - ☐ 2. 3
 - ☒ 3. 2
 - ☐ 4. 1

Q.55 The GSAT-N2 (GSAT-20) is a Ka-band high throughput communication satellite launched by which organisation?

- Ans**
- ☒ 1. NewSpace India Limited (NSIL)
 - ☐ 2. National Remote Sensing Centre (NRSC)
 - ☐ 3. Antrix Corporation
 - ☐ 4. Department of Space (DoS)

Q.56 The body of a squirrel has to prepare for either fighting or running away by using which of the following hormones?

- Ans**
- ☒ 1. Adrenaline
 - ☐ 2. Oestrogen
 - ☐ 3. Thyroxin
 - ☐ 4. Testosterone

Q.57 If 400 J of heat is produced each second in a $4\ \Omega$ resistance, then the current flowing across the resistor is:

- Ans**
- ☒ 1. 10 A
 - ☐ 2. 20 A
 - ☐ 3. 40 A
 - ☐ 4. 30 A

Q.58 A solid rubber sphere weighs 6 kg when its diameter is 6 cm. Using the same material, a hollow sphere is made with outer diameter 18 cm and inner diameter 12 cm. What is its weight?

- Ans**
- ☒ 1. 114 kg
 - ☐ 2. 64.64 kg
 - ☐ 3. 96 kg
 - ☐ 4. 72.64 kg

Q.59 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(8, 4, 12)

(18, 9, 27)

Ans ✗ 1. (20, 12, 36)

✗ 2. (24, 14, 36)

✓ 3. (24, 12, 36)

✗ 4. (24, 12, 34)

Q.60 Select the correct pairs from the following options.

Ans (a) Resistance - volt/ampere

✗ 1.

(b) Resistivity - ohm

(a) Resistance - ampere metre

✗ 2.

(b) Resistivity - volt/metre

(a) Resistance - ohm

✓ 3.

(b) Resistivity - ohm metre

(a) Resistance - ohm

✗ 4.

(b) Resistivity - volt/metre

Q.61 Which of the following observable changes indicate that a chemical reaction has occurred?

(a) Formation of gas

(b) Formation of precipitates

(c) Change in physical state

(d) Colour change

Ans ✓ 1. All (a), (b), (c) and (d)

✗ 2. Only (c) and (d)

✗ 3. Only (a), (b) and (c)

✗ 4. Only (a) and (b)

Q.62 Compounds of carbon, which are linked by only single bonds between the carbon atoms are called _____.

Ans ✗ 1. Both ionic and saturated compounds

✗ 2. Unsaturated compounds

✓ 3. Saturated compounds

✗ 4. Ionic compounds

Q.63 Which of the following molecules is diatomic in nature?

- Ans**
- ☐ 1. Argon
 - ☒ 2. Oxygen
 - ☐ 3. Helium
 - ☐ 4. Phosphorus

Q.64 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. GMS
 - ☐ 2. QWC
 - ☒ 3. SDF
 - ☐ 4. IOU

Q.65 A pair of parallel lines is intersected by a transversal such that $\angle 1$ and $\angle 2$ form a pair of interior angles on the same side of the transversal. If $m\angle 1 = 125^\circ$, what is the measure of $\angle 2$?

- Ans**
- ☐ 1. 145°
 - ☐ 2. 45°
 - ☐ 3. 115°
 - ☒ 4. 55°

Q.66 The magnetic field lines inside a current carrying solenoid are in the form of:

- Ans**
- ☐ 1. concentric circles
 - ☐ 2. curved lines
 - ☒ 3. parallel straight lines
 - ☐ 4. perpendicular straight lines

Q.67 The HCF of 1248 and 2456 is:

- Ans**
- ☒ 1. 8
 - ☐ 2. 12
 - ☐ 3. 16
 - ☐ 4. 14

Q.68 Identify the best method to prepare washing soda from sodium bicarbonate.

- Ans**
- ☒ 1. By heating sodium bicarbonate
 - ☐ 2. By adding sodium bicarbonate to vinegar
 - ☐ 3. By mixing sodium bicarbonate with water
 - ☐ 4. By freezing sodium bicarbonate

Q.69 If $\frac{3}{7} = \frac{x}{-35}$, then x is:

- Ans**
- ☐ 1. 5
 - ☐ 2. -5
 - ☐ 3. 15
 - ☒ 4. -15

Q.70 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tomatoes are apples.

All apples are mushrooms.

Conclusions:

(I) Some mushrooms are tomatoes

(II) All apples are tomatoes

Ans ☒ 1. Neither conclusion (I) nor (II) follows

☒ 2. Both conclusions (I) and (II) follow

☒ 3. Only conclusion (II) follows

☒ 4. Only conclusion (I) follows

Q.71 Buds produced in the notches along the leaf margin of Bryophyllum fall on the soil and develop into new plants. Such a mode of reproduction is known as:

Ans ☒ 1. budding

☒ 2. fragmentation

☒ 3. regeneration

☒ 4. vegetative propagation

Q.72 A pea plant climbs on other plants or fences with the help of:

Ans ☒ 1. sepals

☒ 2. roots

☒ 3. prickles

☒ 4. tendrils

Q.73 National Rifle Association of India (NRAI) approved amendments to the NRAI Match Book and other technical rules for domestic competitions in _____.

Ans ☒ 1. February 2024

☒ 2. April 2024

☒ 3. March 2024

☒ 4. August 2024

Q.74 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

691, 635, 714, 658, 737, ?

Ans ☒ 1. 628

☒ 2. 696

☒ 3. 701

☒ 4. 681

Q.75 On 3rd October 2024, the Union Cabinet decided to merge all Central schemes in the agriculture sector into how many new schemes?

Ans ☒ 1. Three

☒ 2. Five

☒ 3. Four

☒ 4. Two

Q.76 Identify the correct match of plant hormones with their functions.

Ans Gibberellins : Inhibits growth

✗ 1. Cytokinins : Promote cell division

Abscisic acid : Help in the growth of the stem

Gibberellins : Help in the growth of the stem

✓ 2. Cytokinins : Promote cell division

Abscisic acid : Inhibits growth

Gibberellins : Help in the growth of the stem

✗ 3. Cytokinins : Inhibits growth

Abscisic acid : Promote cell division

Gibberellins : Promote cell division

✗ 4. Cytokinins : Help in the growth of the stem

Abscisic acid : Inhibits growth

Q.77 An HR Company employs 4800 people, out of which 45% are males and 60% of the males are either 25 years of age or older. How many males employed in that HR Company are less than 25 years of age?

Ans ✓ 1. 864

✗ 2. 1296

✗ 3. 2640

✗ 4. 2160

Q.78 Name the mode of reproduction in Spirogyra.

Ans ✗ 1. Multiple fission

✗ 2. Budding

✓ 3. Fragmentation

✗ 4. Binary fission

Q.79 Which of the following is NOT a phase transition between the states of matter?

Ans ✗ 1. Condensation

✗ 2. Sublimation

✗ 3. Vaporization

✓ 4. Emission

Q.80 If 63 chocolates are to be divided between A and B in the ratio 4 : 5, then how many chocolates will B get?

Ans ✗ 1. 28

✓ 2. 35

✗ 3. 49

✗ 4. 27

Q.81 For a given colour and given pair of media, and light is going from rarer to denser media, the ratio of sine of the angle of incidence to the sine of angle of refraction is:

- Ans**
- ☒ 1. a constant less than 1
 - ☒ 2. always zero
 - ☒ 3. a constant greater than 1
 - ☒ 4. always 1

Q.82 Rodney has invested ₹15,000 at a rate of 8% p.a. for 1 year on compound interest, compounded half-yearly. The amount received by him will be:

- Ans**
- ☒ 1. ₹16,354
 - ☒ 2. ₹15,840
 - ☒ 3. ₹16,224
 - ☒ 4. ₹15,960

Q.83 A woman is 4 times as old as her daughter. After 6 years, the woman's age will be three times that of her daughter. The sum of their present ages is:

- Ans**
- ☒ 1. 90 years
 - ☒ 2. 90 years
 - ☒ 3. 80 years
 - ☒ 4. 70 years

Q.84 Select the correct pair from the following options based on the refractive defects of vision.

- Ans**
- ☒ 1. (a) Hypermetropia - near-sightedness
 - ☒ 2. (b) Presbyopia - far-sightedness
 - ☒ 3. (a) Presbyopia - near-sightedness
 - ☒ 4. (b) Hypermetropia - far-sightedness
 - ☒ 5. (a) Presbyopia - near-sightedness
 - ☒ 6. (b) Myopia - far-sightedness
 - ☒ 7. (a) Myopia - near-sightedness
 - ☒ 8. (b) Hypermetropia - far-sightedness

Q.85 Which of the following is equal to the value of 1 Volt? (assume J-joule, C-coulomb, s-second)

- Ans**
- ☒ 1. 1 J/IC
 - ☒ 2. 1 C/s
 - ☒ 3. 1 Cs
 - ☒ 4. 1 Js

Q.86 In July 2024, which organisation published the SDG India Index 2023-24 report?

- Ans**
- ☒ 1. The Energy and Resources Institute
 - ☒ 2. Greenpeace India
 - ☒ 3. NITI Aayog
 - ☒ 4. Tropical Forest Research Institute

Q.87 Sporangia blobs contain cells or spores that can eventually develop into new Rhizopus individuals. Such asexual reproduction is known as:

- Ans**
- ☐ 1. vegetative propagation
 - ☐ 2. regeneration
 - ☐ 3. budding
 - ☒ 4. spore formation

Q.88 A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is:

- Ans**
- ☐ 1. 10 hours
 - ☒ 2. 15 hours
 - ☐ 3. 30 hours
 - ☐ 4. 6 hours

Q.89 Pranit starts from Point A and drives 27 km towards West. He then takes a left turn, drives 17 km, turns left and drives 14 km. He then takes a left turn and drives 10 km. He takes a final right turn, drives 13 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 5 km towards South
 - ☐ 2. 7 km towards South
 - ☒ 3. 7 km towards North
 - ☐ 4. 5 km towards North

Q.90 In August 2024, the Government of India established how many Zonal Cultural Centres (ZCCs) to promote cultural traditions and conduct research on folk arts and songs from rural and tribal areas?

- Ans**
- ☒ 1. Seven
 - ☐ 2. Five
 - ☐ 3. Four
 - ☐ 4. Six

Q.91 In which of the following conditions is the work done considered negative?

- Ans**
- ☒ 1. When the force is opposite to the direction of displacement.
 - ☐ 2. When the force is in the direction of displacement.
 - ☐ 3. When the displacement is zero.
 - ☐ 4. When the force is perpendicular to the direction of displacement.

Q.92 Which of the following changes take place in plants by environmental triggers such as light, or gravity?

- Ans**
- ☐ 1. Change in the size of ovary and anther of the flower they produce
 - ☐ 2. Change in the branching pattern of their roots
 - ☐ 3. Change in the shape of the leaves and fruits they provide
 - ☒ 4. Change in the directions that plant parts grow in

Q.93 During meiosis, a cell divides to create _____ new cells.

- Ans**
- ☐ 1. Sixteen
 - ☐ 2. Twenty-four
 - ☒ 3. Four
 - ☐ 4. Eight

Q.94 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 6 8 9 4 4 8 6 5 3 5 1 7 5 8 6 5 8 9 7 3 4 7 0 1 6 8 7 4 5 4 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an even digit?

- Ans**
- ☐ 1. 0
 - ☐ 2. 4
 - ☒ 3. 3
 - ☐ 4. 6

Q.95 The growth of plants occurs only in certain specific regions because:

- Ans**
- ☐ 1. the simple permanent tissue is located only at these regions
 - ☐ 2. the connective tissue is located only at these regions
 - ☒ 3. the dividing tissue, also known as meristematic tissue, is located only at these regions
 - ☐ 4. the complex permanent tissue is located only at these regions

Q.96 The diameter of the reflecting surface of a spherical mirror is same as its:

- Ans**
- ☒ 1. aperture
 - ☐ 2. radius of curvature
 - ☐ 3. inverse of the power
 - ☐ 4. focal length

Q.97 If the selling price of an almirah is doubled, then the profit is tripled. Find the initial profit percentage.

- Ans**
- ☐ 1. 10%
 - ☐ 2. 50%
 - ☐ 3. 25%
 - ☒ 4. 100%

Q.98 Tap S alone fills a cistern in 2 hours; while tap T alone fills the same cistern in 3 hours. A new tap U is attached to the bottom of the cistern which can empty the completely filled cistern in 6 hours. Sunny started all three taps together at 9 a.m. When will the tank be full?

- Ans**
- ☐ 1. 11:15 a.m.
 - ☒ 2. 10:30 a.m.
 - ☐ 3. 9:45 a.m.
 - ☐ 4. 12 p.m.

Q.99 Which hormone regulates carbohydrate, protein and fat metabolism in the body and iodine is essential for the synthesis of it?

- Ans**
- ☒ 1. Adrenaline hormone
 - ☒ 2. Thyroxin hormone
 - ☐ 3. Insulin hormone
 - ☐ 4. Testosterone hormone

Q.100 Study the given table and answer the question that follows.

The table depicts the number of cars sold by Dealer A and Dealer B in the years 2021 and 2022.

Dealers	Number of cars sold in 2021	Number of cars sold in 2022
A	45	65
B	35	75

What is the absolute difference between the number of cars sold by Dealer A in 2021 and Dealer B in 2022?

- Ans**
- ☒ 1. 30
 - ☐ 2. 40
 - ☐ 3. 35
 - ☐ 4. 20

2024/12/27-11:49:05



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Jaipur Engineering College
Test Date	26/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following substances can act as a source of OH^- ions when dissolved in water?

- Ans
- ☒ 1. Carbon dioxide
 - ☒ 2. Sodium hydroxide
 - ☒ 3. Nitric acid
 - ☒ 4. Hydrochloric acid

Q.2 The average of 5 consecutive numbers, in increasing order is n . If the next three numbers are also included, the average will:

- Ans
- ☒ 1. increase by 1
 - ☒ 2. increase by 2
 - ☒ 3. remain the same
 - ☒ 4. increase by 1.5

Q.3 A current of 2A flows through a wire when the two ends of the wire are maintained at a potential difference of 4 V. The resistance of the wire will be:

- Ans
- ☒ 1. 2Ω
 - ☒ 2. 4Ω
 - ☒ 3. $\frac{1}{2} \Omega$
 - ☒ 4. 8Ω

Q.4 Which of the following is a suspension?

- Ans
- ☒ 1. Gases dispersed in liquids
 - ☒ 2. Gases dispersed in solids
 - ☒ 3. Solids dispersed in liquids
 - ☒ 4. Solids dispersed in solids

Q.5 Which of the following statements is true regarding a suspension?

- Ans
- ☐ 1. Particles do not scatter light.
 - ☐ 2. Particles are smaller than those in a solution.
 - ☒ 3. Particles settle down after some time.
 - ☐ 4. Particles cannot be separated by filtration.

Q.6 25% of 25% is equal to:

- Ans
- ☒ 1. 0.0625
 - ☐ 2. 0.625
 - ☐ 3. 6.25
 - ☐ 4. 0.00625

Q.7 The LCM of the numbers 2.5 and 0.175 is:

- Ans
- ☐ 1. 1.75
 - ☒ 2. 17.5
 - ☐ 3. 175
 - ☐ 4. 0.0175

Q.8 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only three boxes are kept below L. Only two boxes are kept between L and F. Only A is kept above B. M is kept at some place below P and at some place above E. Which box is kept at the second position from the bottom?

- Ans
- ☐ 1. L
 - ☐ 2. M
 - ☐ 3. F
 - ☒ 4. E

Q.9 Which of the following act(s) as a site for protein synthesis?

- Ans
- ☐ 1. Cell membrane
 - ☐ 2. Plastid
 - ☒ 3. Ribosomes
 - ☐ 4. Vacuole

Q.10 The weights (in kg) of 9 members of a school cricket team are 50, 63, x, 62, 64, 48, 51, 55, 48. If the mean weight is 57 kg, then the value of x is _____.

- Ans
- ☐ 1. 57
 - ☒ 2. 72
 - ☐ 3. 63
 - ☐ 4. 64

Q.11 Cells of the meristematic tissue are very active, but they lack:

- Ans
- ☐ 1. prominent nuclei
 - ☐ 2. thin cellulose walls
 - ☒ 3. vacuoles
 - ☐ 4. dense cytoplasm

Q.12 Which of the following actions are regulated by the medulla in the hind brain?

- Ans**
- ☐ 1. Maintaining balance and posture
 - ☒ 2. Salivation
 - ☐ 3. Riding a bicycle
 - ☐ 4. Walking

Q.13 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

24, 31, 45, 66, 94, ?

- Ans**
- ☐ 1. 110
 - ☐ 2. 119
 - ☒ 3. 129
 - ☐ 4. 134

Q.14 Which Indian achieved a significant milestone by winning his first Formula 2 Sprint Race at the Hungarian Grand Prix in July 2024?

- Ans**
- ☐ 1. Arjun Maini
 - ☐ 2. Yash Aradhya
 - ☒ 3. Kush Maini
 - ☐ 4. Jehan Daruvala

Q.15 A book is lying on a table and Rahul moves the book in the direction of the force for some distance D. The work done by the force is:

- Ans**
- ☐ 1. undetermined
 - ☐ 2. zero
 - ☐ 3. negative
 - ☒ 4. positive

Q.16 Which organization released the SDG India Index 2023-24, the fourth edition for measuring progress on the Sustainable Development Goals?

- Ans**
- ☐ 1. Reserve Bank of India (RBI)
 - ☒ 2. NITI Aayog
 - ☐ 3. Indian Statistical Institute
 - ☐ 4. Ministry of Environment

Q.17 Which of the following factors do NOT affect the resistance of a conductor (at constant temperature):

- (i) Area of cross-section of the conductor
- (ii) Current flowing through the conductor
- (iii) Length of the conductor

- Ans**
- ☐ 1. Both (i) and (iii)
 - ☐ 2. Both (i) and (ii)
 - ☐ 3. Only (iii)
 - ☒ 4. Only (ii)

Q.18 The ratio of milk to honey in 20 litres of a mixture is 3 : 2. The quantity of milk in the mixture is:

- Ans**
- ☐ 1. 6 litres
 - ☐ 2. 8 litres
 - ☐ 3. 10 litres
 - ☒ 4. 12 litres

Q.19 Bharat borrowed a sum of ₹10,000 at a certain rate of simple interest for 2 years. If he paid an interest of ₹2,000 at the end of the period, then find the rate of interest per annum.

- Ans**
- ☐ 1. 25%
 - ☐ 2. 15%
 - ☒ 3. 10%
 - ☐ 4. 20%

Q.20 After the process of fertilisation which part of the flower undergoes transformation to develop into a seed?

- Ans**
- ☒ 1. Ovule
 - ☐ 2. Ovary
 - ☐ 3. Style
 - ☐ 4. Stigma

Q.21 The age of a father is twice the sum of the ages of his 3 children. After 15 years, his age will be equal to the sum of the ages of his children. How old will the father be 15 years later?

- Ans**
- ☐ 1. 85 years
 - ☒ 2. 75 years
 - ☐ 3. 90 years
 - ☐ 4. 95 years

Q.22 Given below is a cause followed by possible effects numbered I and II. Read the cause carefully and decide which of the two can be a/the possible effect(s).

Cause - Inflation is an increase in the general price level of goods and services in an economy. More jobs and higher wages increase household incomes and lead to a rise in consumer spending, further increasing aggregate demand and the scope for firms to increase the prices of their goods and services. When this happens across a large number of businesses and sectors, this leads to an increase in inflation.

Effect I - In an inflationary environment, unevenly rising prices inevitably reduce the purchasing power of some consumers.

Effect II - Those with wealth tend to inherit more and as they have managed to put aside money and invest surpluses, they will be least damaged by any rampant inflation in the economy.

- Ans**
- ☐ 1. Neither I nor II are possible effects.
 - ☒ 2. Only I is a possible effect.
 - ☐ 3. Only II is a possible effect.
 - ☐ 4. Both I and II are possible effects.

Q.23 What was the theme of the 'GST & Customs Pavilion' inaugurated at the India International Trade Fair (IITF) 2024 in November 2024?

- Ans**
- ☐ 1. Facilitating trade, strengthening economy
 - ☐ 2. Facilitating economy, fostering trade
 - ☐ 3. Supporting trade, facilitating economy
 - ☒ 4. Facilitating trade, fostering economy

Q.24 In a certain code language, 'EVIL' is coded as '6824' and 'BONE' is coded as '8753'.

What is the code for 'E' in the given code language?

- Ans**
- ☐ 1. 3
 - ☒ 2. 8
 - ☐ 3. 7
 - ☐ 4. 6

Q.25 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) & 3 Ω 2 & % 4 6 @ 8 \$ 7 9 # 1 * £ 1 + & @ 5 (Right)

How many such symbols are there, each of which is immediately followed by a symbol and also immediately preceded by a symbol?

- Ans**
- ☐ 1. More than two
 - ☐ 2. None
 - ☐ 3. Two
 - ☒ 4. One

Q.26 Select the correct option related to the function of villi in the small intestine.

- Ans**
- ☐ 1. Protection from acid
 - ☐ 2. Helps in excretion
 - ☐ 3. Secretion of minerals
 - ☒ 4. Increases absorptive surface area

Q.27 David owns a plot worth ₹10,000. He sells it to Rodney at 10% profit. Rodney sells the plot back to David at a loss of 10%. In the whole transaction, Rodney realises _____.

- Ans**
- ☐ 1. profit of ₹2,000
 - ☒ 2. loss of ₹1,100
 - ☐ 3. loss of ₹1,000
 - ☐ 4. no profit no loss

Q.28 Which team won the Khelo India Winter Games 2024 title, winning ten gold, five silver and six bronze?

- Ans**
- ☐ 1. Ladakh
 - ☐ 2. Maharashtra
 - ☐ 3. Karnataka
 - ☒ 4. The Indian Army

Q.29 Which of the following ion concentrations is measured by the pH scale?

- Ans**
- ☐ 1. Na⁺ ion concentration
 - ☐ 2. F⁻ ion concentration
 - ☐ 3. Cl⁻ ion concentration
 - ☒ 4. H⁺ ion concentration

Q.30 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

MOK, NPL, OQM, PRN, ?

Ans ✓ 1. QSO

✗ 2. QOS

✗ 3. SOQ

✗ 4. SQO

Q.31 The remarkable journey of Indian cinema began in 1913 with the release of which of the following first indigenous films?

Ans ✗ 1. Lanka Dahan

✗ 2. Mohini Bhasmasur

✗ 3. Keechaka Vadham

✓ 4. Raja Harishchandra

Q.32 In which state of matter does evaporation occur?

Ans ✗ 1. Both plasma and liquid

✓ 2. Liquid only

✗ 3. Plasma only

✗ 4. Solid only

Q.33 Which of the following statements is/are correct related to the eco-system?

(i) Ozone is a molecule formed by three atoms of oxygen.

(ii) Oxygen (O₂) is essential for all aerobic forms of life.

(iii) Ozone is non-poisonous.

Ans ✗ 1. Only (i) and (iii)

✓ 2. Only (i) and (ii)

✗ 3. (i), (ii) and (iii)

✗ 4. Only (i)

Q.34 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 20-times of the same work in _____(days).

Ans ✗ 1. 4

✗ 2. 5

✗ 3. 81

✓ 4. 80

Q.35 If each vowel in the word FLOWING is changed to the letter immediately following it in the English alphabetical order and each consonant is changed to the letter immediately preceding it in the English alphabetical order, then how many vowels are there in the group of letters thus formed?

Ans ✗ 1. 2

✗ 2. 0

✗ 3. 3

✓ 4. 1

Q.36 Which of the following aircrafts was NOT a part of the Indian Air Force's participation in Exercise Cobra Warrior 2023?

- Ans**
- ☐ 1. IL-78 Mid Air Refueller
 - ☐ 2. C-17 Globemaster III
 - ☒ 3. F-16 Fighting Falcon
 - ☐ 4. Mirage 2000

Q.37 Which edition of Rashtriya Poshan Maah was celebrated nationwide in September 2024, promoted by Ministry of Women and Child Development focusing on advancing nutritional outcomes for children, adolescent girls, pregnant women and lactating mothers holistically?

- Ans**
- ☐ 1. 6th
 - ☒ 2. 7th
 - ☐ 3. 8th
 - ☐ 4. 5th

Q.38 A bus accelerates uniformly from 12 m s^{-1} to 30 m s^{-1} in 30 s. Calculate the distance covered by the bus in that time.

- Ans**
- ☐ 1. 175 m
 - ☐ 2. 1900 m
 - ☒ 3. 630 m
 - ☐ 4. 400 m

Q.39 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tables are knives.

All knives are paper.

Some papers are blue.

Conclusions:

(I) Some blues are tables.

(II) Some papers are tables.

- Ans**
- ☐ 1. Neither conclusion (I) nor (II) follows.
 - ☒ 2. Only conclusion (II) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☐ 4. Only conclusion (I) follows.

Q.40 When a white light falls on a glass prism, _____ colour undergoes maximum deviation.

- Ans**
- ☐ 1. Blue
 - ☐ 2. Yellow
 - ☒ 3. Violet
 - ☐ 4. Red

Q.41 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. No one sits to the left of B. Only four people sit between B and Y. Only three people sit to the right of C. A sits to the immediate left of L. Z is not an immediate neighbour of C.

Who sits at the rightmost end of the row?

- Ans**
- ☐ 1. X
 - ☐ 2. Y
 - ☒ 3. Z
 - ☐ 4. L

Q.42 Find the value of $2\sec^2 A + 6\operatorname{cosec}^2 A - 2\tan^2 A - 6\cot^2 A$.

- Ans**
- ☐ 1. 4
 - ☐ 2. 2
 - ☒ 3. 8
 - ☐ 4. 6

Q.43 When water enters into the guard cells, the guard cells _____ and the stomatal pore _____.

- Ans**
- ☒ 1. swell; opens
 - ☐ 2. shrink; closes
 - ☐ 3. swell; shrinks
 - ☐ 4. shrink; opens

Q.44 Which of the following statements is correct about soaps and detergents?

- Ans**
- ☐ 1. Hydrophobic interacts with water molecules.
 - ☐ 2. Soap molecules have no ends.
 - ☐ 3. Hydrophilic ends interact with hydrocarbons.
 - ☒ 4. Soaps molecules have two ends – one is hydrophilic and the other end is hydrophobic.

Q.45 A positive and negative sign in the magnification indicates that the images are:

- Ans**
- ☒ 1. virtual and real, respectively
 - ☐ 2. both real in nature
 - ☐ 3. both virtual in nature
 - ☐ 4. real and virtual, respectively

Q.46 A force of 20 N acts on a body in a direction opposite to the displacement of the body. If under the action of this force the displacement is 2m, the work done will be:

- Ans**
- ☒ 1. - 40 J
 - ☐ 2. 40 J
 - ☐ 3. - 20 J
 - ☐ 4. 0 J

Q.47 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. Only two people sit between B and P when counted from the right of B. F sits second to the left of B. Q sits to the immediate left of A. E is not an immediate neighbour of B. Who sits third to the right of R?

- Ans**
- ☐ 1. Q
 - ☐ 2. E
 - ☒ 3. A
 - ☐ 4. P

Q.48 How many seats did the Bharatiya Janata Party win in Lok Sabha election 2024?

- Ans**
- ☐ 1. 99
 - ☒ 2. 240
 - ☐ 3. 37
 - ☐ 4. 140

Q.49 The position(s) of how many letters will remain unchanged if each of the letters in the word DISPLAY is arranged in the English alphabetical order ?

- Ans**
- ☒ 1. 1
 - ☐ 2. 3
 - ☐ 3. 0
 - ☐ 4. 2

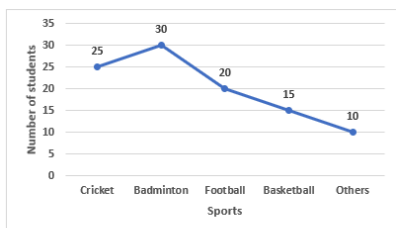
Q.50 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. VTR
 - ☐ 2. YWT
 - ☐ 3. QOL
 - ☐ 4. MKH

Q.51 Study the given graph and answer the question that follows.

The graph shows the number of students who play Cricket, Badminton, Football, Basketball and other sports (Others).



What percentage of students play cricket as compared to the total number of students who play any of the sports?

- Ans**
- ☐ 1. 15%
 - ☐ 2. 35%
 - ☒ 3. 25%
 - ☐ 4. 45%

Q.52 When hydrochloric acid (HCl) reacts with sodium hydroxide (NaOH), which of the following products is formed?

- Ans**
- ☒ 1. Water and salt
 - ☐ 2. Carbon dioxide and water
 - ☐ 3. Only salt
 - ☐ 4. Only water

- Q.53** A motorcycle starting from rest attains a velocity of 30 m s^{-1} in 10 s. Assuming that the acceleration is uniform, find the distance travelled by the motorcycle to attain this velocity.
- Ans** ☐ 1. 250 m
☐ 2. 300 m
☒ 3. 150 m
☐ 4. 270 m
- Q.54** In a certain code language, 'here we are' is written as 'aj tm yg' and 'are we done' is written as 'gm aj tm'. How is 'done' written in the given language?
- Ans** ☐ 1. tm
☐ 2. yg
☒ 3. gm
☐ 4. aj
- Q.55** In which year were cells first discovered by Robert Hooke?
- Ans** ☐ 1. 1664
☒ 2. 1665
☐ 3. 1667
☐ 4. 1670
- Q.56** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?
GJE, ILG, KNI, MPK, ?
- Ans** ☐ 1. ROM
☒ 2. ORM
☐ 3. OMR
☐ 4. RMO
- Q.57** The total surface area of a solid hemisphere is 166.32 sq cm, find its curved surface area?
- Ans** ☐ 1. 196.96 sq cm
☐ 2. 221.76 sq cm
☐ 3. 55.44 sq cm
☒ 4. 110.88 sq cm
- Q.58** If the price of tea is increased by 20%, then by what percentage must a householder reduce her consumption of tea so as to leave her expenditure on tea unchanged?
- Ans** ☐ 1. 20%
☒ 2. $16\frac{2}{3}\%$
☐ 3. $33\frac{1}{3}\%$
☐ 4. 25%
- Q.59** The compound interest on ₹2,500 after 2 years, at a rate of 6% per annum, compounded annually, will be:
- Ans** ☒ 1. ₹309
☐ 2. ₹322
☐ 3. ₹320
☐ 4. ₹318

Q.60 A bus travels two-fifth of the distance at a speed of 50 km/h and the remaining distance at a speed of 60 km/h. What is the average speed of the bus for the whole journey?

- Ans**
- ☐ 1. $54\frac{7}{9}$ km/h
 - ☒ 2. $55\frac{5}{9}$ km/h
 - ☐ 3. $57\frac{2}{9}$ km/h
 - ☐ 4. $56\frac{8}{9}$ km/h

Q.61 Shreya starts from point A and drives 4 km towards the East. She takes three simultaneous left turns and drives 2 km, 2 km and 3 km, respectively. She then takes a right turn and drives 1 km. She takes a final right turn and drives 1 km to reach point B.

How far (shortest distance) and towards which direction should she drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☒ 1. 1 km West
 - ☐ 2. 1 km East
 - ☐ 3. 1 km South
 - ☐ 4. 1 km North

Q.62 What would be the name of hydrocarbon having three carbon chain with a double bond?

- Ans**
- ☐ 1. Propane
 - ☐ 2. Propanone
 - ☒ 3. Propene
 - ☐ 4. Propyne

Q.63 Select the INCORRECT statement.

- Ans**
- ☐ 1. Many diseases can be sexually transmitted.
 - ☐ 2. Gonorrhea is a bacterial disease.
 - ☐ 3. AIDS is caused by the HIV virus.
 - ☒ 4. Warts are a protozoan disease.

Q.64 What is the term used to describe a solution that cannot dissolve any more solute at a given temperature?

- Ans**
- ☐ 1. Dilute solution
 - ☐ 2. Heterogeneous solution
 - ☐ 3. Unsaturated solution
 - ☒ 4. Saturated solution

Q.65 A concave mirror has a radius of curvature of 4.00 m. If any object is located at 2.00 m from this mirror, find the position of the image.

- Ans**
- ☒ 1. Infinity
 - ☐ 2. Zero
 - ☐ 3. Between pole and focus point
 - ☐ 4. At centre of curvature

Q.66 PQRS is a trapezium in which $QR \parallel PS$ and $PR = RS$. If $\angle PQR = 96^\circ$ and $\angle QPR = 36^\circ$, then what is the measure of $\angle PRS$?

- Ans**
- ☐ 1. 75°
 - ☒ 2. 84°
 - ☐ 3. 80°
 - ☐ 4. 70°

Q.67 The LCM of the numbers 36, 54, 72 and 96 is:

- Ans**
- ☐ 1. 1064
 - ☐ 2. 764
 - ☒ 3. 864
 - ☐ 4. 964

Q.68 Simplify the following expression:

$$\frac{4.35 \times 4.35 - 2.67 \times 2.67}{1.68}$$

- Ans**
- ☐ 1. 6.99
 - ☐ 2. 7.04
 - ☐ 3. 6.96
 - ☒ 4. 7.02

Q.69 VRXT is related to QMSO in a certain way based on the English alphabetical order. In the same way, SOUQ is related to NJPL. To which of the following options is PLRN related, following the same logic?

- Ans**
- ☒ 1. KGMI
 - ☐ 2. GKMI
 - ☐ 3. KGIM
 - ☐ 4. GKIM

Q.70 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$63 \div 9 \times 6 + 13 - 4 = ?$$

- Ans**
- ☒ 1. 53
 - ☐ 2. 48
 - ☐ 3. 51
 - ☐ 4. 55

Q.71 Which of the following statements related to the law of conservation of energy is true?

- Ans**
- ☒ 1. The law of conservation of energy is valid in all situations and for all kinds of transformations.
 - ☐ 2. Energy cannot be converted from one form to another.
 - ☐ 3. Energy can be created or destroyed.
 - ☐ 4. The total energy before and after a transformation process are different.

Q.72 A man sold an article for ₹405 by giving a discount of $d\%$ on its marked price. If the marked price of the article is ₹540, then what is the value of d ?

- Ans**
- ☐ 1. 20
 - ☐ 2. 12.5
 - ☒ 3. 25
 - ☐ 4. 12

Q.73 Which of the following is an example of a unicellular organism?

- Ans**
- ☐ 1. Lizard
 - ☐ 2. Hydra
 - ☒ 3. Amoeba
 - ☐ 4. House fly

Q.74 Which of the following is NOT an example of oxidation reaction?

- Ans**
- ☐ 1. Formation of magnesium oxide from magnesium
 - ☐ 2. Rancidity of oils
 - ☒ 3. Formation of zinc from zinc oxide
 - ☐ 4. Corrosion

Q.75 If $\times$ means $-$, $-$ means $\times$, $\times$ means $+$, and $+$ means $\times$, then what will come in place of the question mark (?) in the following equation?

$$65 \times 13 - 7 + 24 + 9 = ?$$

- Ans**
- ☐ 1. 46
 - ☒ 2. 50
 - ☐ 3. 48
 - ☐ 4. 40

Q.76 In which of the following modes of asexual reproduction if an individual is cut or broken into many pieces, many of these pieces grow into separate individuals?

- Ans**
- ☐ 1. fission
 - ☒ 2. regeneration
 - ☐ 3. budding
 - ☐ 4. spore formation

Q.77 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

WEST - EWST - TSEW

POLE - OPLE - ELOP

- Ans**
- ☒ 1. VIEW - IVEW - WEIV
 - ☐ 2. FANG - AFNG - ANGf
 - ☐ 3. ROAD - ORAD - DOAR
 - ☐ 4. GROW - GORW - WORG

Q.78 The rate of doing work can be defined as _____.

- Ans**
- ☒ 1. power
 - ☐ 2. force
 - ☐ 3. work
 - ☐ 4. energy

Q.79 Which of the following metals is LEAST reactive towards dilute hydrochloric acid?

- Ans**
- ☐ 1. Al
 - ☐ 2. Zn
 - ☐ 3. Mg
 - ☒ 4. Fe

Q.80 If an object on the surface of the moon weighs 3 N, the weight of the same object on surface of the Earth is _____.

- Ans**
- ☐ 1. 24 N
 - ☐ 2. 12 N
 - ☒ 3. 18 N
 - ☐ 4. 3 N

Q.81 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(4, 12, 24)

(7, 21, 42)

- Ans**
- ☐ 1. (9, 27, 52)
 - ☐ 2. (9, 36, 54)
 - ☐ 3. (7, 27, 54)
 - ☒ 4. (9, 27, 54)

Q.82 In a certain code language,

$P + Q$ means 'P is the father of Q',

$P - Q$ means 'P is the son of Q',

$P \times Q$ means 'P is the wife of Q' and

$P \div Q$ means 'P is the brother of Q'.

Based on the above, how is C related to E if ' $A - B \times C \div D + E$ '?

- Ans**
- ☐ 1. Son
 - ☐ 2. Father
 - ☒ 3. Father's brother
 - ☐ 4. Father's father

Q.83 The HCF of two numbers is 7 and their LCM is 434. If one of the numbers is 14, the other number is:

- Ans**
- ☐ 1. 146
 - ☐ 2. 52
 - ☐ 3. 48
 - ☒ 4. 217

Q.84 If the radius of a sphere is increased by 20%, then the new volume will become _____ of the original volume.

- Ans**
- ☐ 1. 120%
 - ☐ 2. 20%
 - ☐ 3. 72.8%
 - ☒ 4. 172.8%

Q.85 In November 2024, the Indian Computer Emergency Response Team (CERT-In) signed a Memorandum of Understanding (MoU) with which of the following international cybersecurity companies, specializing in networking and security, to launch joint initiatives aimed at advancing cyber awareness and cybersecurity skills in academia?

- Ans**
- ☐ 1. Palo Alto Networks
 - ☐ 2. CrowdStrike
 - ☒ 3. Fortinet
 - ☐ 4. Cisco

Q.86 Which of the following is a Pythagorean triplet?

- Ans**
- ☐ 1. (6, 9, 11)
 - ☐ 2. (5, 7, 9)
 - ☐ 3. (2, 3, 5)
 - ☒ 4. (8, 15, 17)

Q.87 Which of the following jointly organised the 'Kaveri Meets Ganga festival series', in November 2024?

- (1) Sangeet Natak Akademi
- (2) Kalakshetra
- (3) Centre for Cultural Resources and Training (CCRT)

- Ans**
- ☐ 1. Only 1 and 2
 - ☐ 2. Only 1 and 3
 - ☐ 3. Only 2 and 3
 - ☒ 4. 1, 2 and 3

Q.88 Which of the following statements is/are correct related to respiration?

- (i) In alveoli, exchange of gases takes place.
- (ii) The walls of alveoli contain an extensive network of blood vessel.
- (iii) In human beings, the respiratory pigments is haemoglobin.

- Ans**
- ☐ 1. Only (i) and (ii)
 - ☒ 2. (i), (ii) and (iii)
 - ☐ 3. Only (i) and (iii)
 - ☐ 4. Only (i)

Q.89 What is the full form of CNG?

- Ans**
- ☐ 1. Carbonated Natural Gas
 - ☐ 2. Chemical Natural Gas
 - ☒ 3. Compressed Natural Gas
 - ☐ 4. Combustible Nitrogen Gas

Q.90 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 58 :: 117 : Y

- Ans**
- ✓ 1. X = 94, Y = 81
 - ✗ 2. X = 109, Y = 99
 - ✗ 3. X = 92, Y = 88
 - ✗ 4. X = 102, Y = 95

Q.91 What type of plant tissue is classified as apical, lateral and intercalary?

- Ans**
- ✗ 1. Simple permanent tissue
 - ✗ 2. Connective tissue
 - ✗ 3. Complex permanent tissue
 - ✓ 4. Meristematic tissue

Q.92 If a 4-digit number 5k21 is divisible by 9, then the value of digit 'k' is:

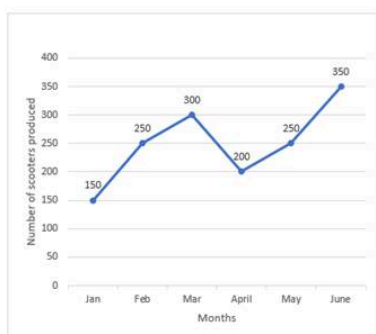
- Ans**
- ✗ 1. 3
 - ✓ 2. 1
 - ✗ 3. 9
 - ✗ 4. 0

Q.93 If $144 : k :: k : 36$, and $k > 0$, find the value of $k - 1$.

- Ans**
- ✓ 1. 71
 - ✗ 2. 27
 - ✗ 3. 72
 - ✗ 4. 26

Q.94 Study the given graph and answer the question that follows.

The line graph shows the number of scooters produced in a factory during the first six months of a year.



What is the difference between the maximum and minimum production of scooters in a month?

- Ans**
- ✗ 1. 150
 - ✓ 2. 200
 - ✗ 3. 100
 - ✗ 4. 250

Q.95 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the difference in the cost of 2 tables and 2 chairs?

- Ans**
- ☒ 1. ₹425
 - ☒ 2. ₹365
 - ☐ 3. ₹400
 - ☐ 4. ₹345

Q.96 Which of the following compounds is used in tincture iodine?

- Ans**
- ☒ 1. Ethanol
 - ☐ 2. Ethanoic acid
 - ☐ 3. Methanol
 - ☐ 4. Propanol

Q.97 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. JLG
 - ☒ 2. HJF
 - ☐ 3. FHC
 - ☐ 4. NPK

Q.98 Which of the following does NOT belong to the category of asexual reproduction?

- Ans**
- ☐ 1. Regeneration
 - ☐ 2. Vegetative propagation
 - ☒ 3. Fertilisation
 - ☐ 4. Spore formation

Q.99 Ansh and Tanvi can do a piece of work in 24 days and 40 days, respectively. They started the work, and after 8 days, Shubham, who can complete the same work in 20 days alone, joined them. In how many days can the whole work be completed?

- Ans**
- ☐ 1. 15 days
 - ☐ 2. 16 days
 - ☐ 3. 20 days
 - ☒ 4. 12 days

Q.100 What is the nature of the magnetic field inside a current-carrying solenoid?

- Ans**
- ☒ 1. Strong uniform magnetic field
 - ☐ 2. Weak non-uniform magnetic field
 - ☐ 3. Weak uniform magnetic field
 - ☐ 4. Strong non-uniform magnetic field



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Pawan Ganga Educational Center 2
Test Date	27/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Consider an object moving along a straight line, it starts from point A, reaches point B, and then returns to point A. If the distance between A and B is 20 m, then the net displacement of the object is:

- Ans**
- ☒ 1. 0 m
 - ☐ 2. 40 m
 - ☐ 3. 20 m
 - ☐ 4. 10 m

Q.2 If a 5 N force applied to an object displaces it by 3 m from its initial position, then what is the work done by the force?

- Ans**
- ☒ 1. 15 J
 - ☐ 2. 5/3 J
 - ☐ 3. 20 J
 - ☐ 4. 50 J

Q.3 Which of the following is the dispersed phase of automobile exhaust?

- Ans**
- ☐ 1. Liquid phase
 - ☐ 2. Plasma phase
 - ☒ 3. Solid phase
 - ☐ 4. Gaseous phase

Q.4 In July 2024, which bank launched a new term deposit scheme 'Amrit Vrishti' with a tenure of 444 days?

- Ans**
- ☐ 1. CITI Bank
 - ☐ 2. ICICI
 - ☐ 3. HDFC
 - ☒ 4. SBI

Q.5 If 6, 18, 39, and x are in proportion, then find the value of x.

Ans ☒ 1. 117

☐ 2. 112

☐ 3. 115

☐ 4. 139

Q.6 What will come in the place of '?' in the following equation, if '+' and '÷' are interchanged and '×' and '-' are interchanged?

$$24 + 4 - 15 \div 2 \times 12 = ?$$

Ans ☐ 1. 90

☐ 2. 100

☐ 3. 70

☒ 4. 80

Q.7 On 28 October 2024, in which city of Gujarat did Prime Minister Narendra Modi and Spanish PM Pedro Sanchez inaugurate the Tata Aircraft Complex, India's first private facility to build military planes?

Ans ☒ 1. Vadodara

☐ 2. Kutch

☐ 3. Ahmedabad

☐ 4. Gandhi Nagar

Q.8 Which of the following statements is NOT true about a solution?

Ans ☒ 1. Particles of the solution can be seen by the naked eye.

☐ 2. The solute particles cannot be separated by filtration.

☐ 3. The solute particles do not settle down when left undisturbed.

☐ 4. A solution is a homogeneous mixture.

Q.9 In a certain code language, 'TEACH' is coded as '18239', 'MAKE' is coded as '4168' and 'CHECK' is coded as '83943'. What is the code for 'T' in the given code language?

Ans ☒ 1. 2

☐ 2. 8

☐ 3. 1

☐ 4. 9

Q.10 What is the SI unit of mass and weight of a body, respectively?

Ans ☐ 1. kg, s

☐ 2. kg, kg

☒ 3. kg, N

☐ 4. gm, N

Q.11 If $3^{(K-2)} \times 3^K = 729$, then the value of K is:

Ans ☐ 1. 2

☒ 2. 4

☐ 3. 6

☐ 4. 8

Q.12 Which city in Uttar Pradesh was awarded the first prize under the Medium-sized Cities category (Population between 3 lakh and 10 lakh) in the Swachh Vayu Survekshan 2024?

- Ans**
- ✓ 1. Agra
 - ✗ 2. Prayagraj
 - ✗ 3. Firozabad
 - ✗ 4. Varanasi

Q.13 which of the following is/ are correct related to Adrenalin hormone ?

- (i) Heart beats faster
- (ii) Breathing rate increases
- (iii) Decreases blood pressure

- Ans**
- ✗ 1. (i), (ii) and (iii)
 - ✓ 2. Only (i) and (ii)
 - ✗ 3. Only (i) and (iii)
 - ✗ 4. Only (ii) and (iii)

Q.14 The sum of two numbers is 35, and their LCM is 306. The two numbers are:

- Ans**
- ✗ 1. 13, 22
 - ✗ 2. 16, 19
 - ✓ 3. 17, 18
 - ✗ 4. 14, 21

Q.15 John, Kelly, Lisa, Mike, Nancy, and Owen—are sitting in a straight line, facing north. Only one person sits to the left of Kelly. Exactly two people sit between Kelly and Lisa. Mike sits second to the right of Owen. Mike is not an immediate neighbor of Lisa. John sits to the immediate right of Lisa.

Who sits at the extreme left end of the line ?

- Ans**
- ✓ 1. Owen
 - ✗ 2. John
 - ✗ 3. Mike
 - ✗ 4. Nancy

Q.16 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) \$ 1 & 8 4 7 £ * 5 3 @ 2 % 9 + Ω 6 # (Right)

How many such numbers are there, each of which is immediately preceded by a number and also immediately followed by another number?

- Ans**
- ✓ 1. 1
 - ✗ 2. 3
 - ✗ 3. 2
 - ✗ 4. 4

Q.17 Magnification produced by a lens is related to the object-distance u , and the image-distance v . This relationship is given by:

- Ans**
- ☐ 1. $u - v$
 - ☐ 2. u/v
 - ☒ 3. v/u
 - ☐ 4. $v - u$

Q.18 Which state of matter has the highest kinetic energy of particles?

- Ans**
- ☐ 1. Liquid
 - ☐ 2. Plasma
 - ☒ 3. Gas
 - ☐ 4. Solid

Q.19 A cuboidal room is of length 15 m, breadth 17 m, and height 21 m. Find the cost of painting its walls and ceiling at the rate of ₹42/m².

- Ans**
- ☐ 1. ₹68,918
 - ☐ 2. ₹65,128
 - ☐ 3. ₹64,258
 - ☒ 4. ₹67,158

Q.20 In plants, some waste products are stored as resins and gums especially in the:

- Ans**
- ☐ 1. tissues with dead cells
 - ☒ 2. old xylem
 - ☐ 3. cellular vacuoles
 - ☐ 4. leaves

Q.21 How does a plant move its leaves in response to touch?

- Ans**
- ☐ 1. By changing the amount of lipid in them
 - ☒ 2. By changing the amount of water in them
 - ☐ 3. By changing the amount of nucleic acid in them
 - ☐ 4. By changing the amount of protein in them

Q.22 David's salary was first decreased by 40% and subsequently increased by 50%. What percentage did he lose from his initial salary?

- Ans**
- ☐ 1. 12%
 - ☐ 2. 15%
 - ☐ 3. 14%
 - ☒ 4. 10%

Q.23 What should be added to $\frac{-5}{9}$ to get $\frac{-5}{6}$?

- Ans**
- ☐ 1. $\frac{-5}{9}$
 - ☐ 2. $\frac{-5}{12}$
 - ☐ 3. $\frac{-5}{6}$
 - ☒ 4. $\frac{-5}{18}$

Q.24 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. L sits third to the left of K. Only two people sit between E and F when counted from the left of F. C sits to the immediate right of K. C sits second to the left of E. B is not an immediate neighbour of L. Who sits third to the right of B?

- Ans**
- ☐ 1. L
 - ☒ 2. D
 - ☐ 3. K
 - ☐ 4. F

Q.25 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

LNI, MOJ, NPK, OQL, ?

- Ans**
- ☐ 1. PMR
 - ☐ 2. RPM
 - ☐ 3. RMP
 - ☒ 4. PRM

Q.26 Who among the following received the 53rd Dadasaheb Phalke Award in 2023 for her lifetime achievement in Indian cinema?

- Ans**
- ☒ 1. Waheeda Rehman
 - ☐ 2. Sridevi
 - ☐ 3. Rekha
 - ☐ 4. Hema Malini

Q.27 If an object takes 2 seconds to travel once around a circular path with radius 'r', its speed 'v' is given by _____.

- Ans**
- ☐ 1. $\frac{\pi r}{2}$ metre/second
 - ☐ 2. $2\pi r$ metre/second
 - ☐ 3. $\frac{\pi r}{4}$ metre/second
 - ☒ 4. πr metre/second

Q.28 If the magnitude of the force exerted by the earth on the moon is $2.02 \times 10^{20} \text{ N}$, then the magnitude of the force exerted by the moon on the earth is _____.

- Ans**
- ☐ 1. $4.04 \times 10^{20} \text{ N}$
 - ☒ 2. $2.02 \times 10^{20} \text{ N}$
 - ☐ 3. $6.06 \times 10^{20} \text{ N}$
 - ☐ 4. $1.01 \times 10^{20} \text{ N}$

Q.29 Y has to score 40% marks to pass in an exam. He gets 20 marks and fails by 40 marks. The maximum marks of the exam is:

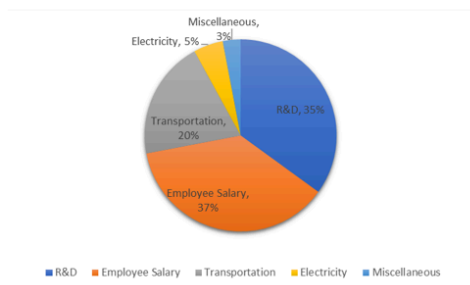
- Ans**
- ☒ 1. 100
 - ☒ 2. 150
 - ☒ 3. 250
 - ☒ 4. 200

Q.30 The work done by a person pushing a brick parallel to the ground with a force of 2 N is 3 J. The displacement caused by the force is equal to _____.

- Ans**
- ☒ 1. 0.66 m
 - ☒ 2. 1.5 m
 - ☒ 3. 6 m
 - ☒ 4. 5 m

Q.31 Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of the different costs incurred by Company X in the year 2020.



If the total cost incurred by the company X in 2020 is \$100,000, what is the electricity cost incurred by the company in 2020?

- Ans**
- ☒ 1. \$15,000
 - ☒ 2. \$35,000
 - ☒ 3. \$50,000
 - ☒ 4. \$5,000

Q.32 What is the budget allocation for the Pradhan Mantri Vishwakarma Yojana (PM Vishwakarma Scheme) for the period from 2023-24 to 2027-28?

- Ans**
- ☒ 1. ₹16,000 crore
 - ☒ 2. ₹15,000 crore
 - ☒ 3. ₹13,000 crore
 - ☒ 4. ₹14,000 crore

Q.33 If the median of a data is 24.12 less than its mode, then the median of the data exceeds its mean by _____. (Use the empirical formula to find the answer)

- Ans**
- ☒ 1. 16.08
 - ☒ 2. 12.06
 - ☒ 3. 6.03
 - ☒ 4. 8.04

Q.34 If your nose is blocked, the olfactory receptors are NOT able to detect:

- Ans**
- ☐ 1. taste
 - ☐ 2. hearing
 - ☒ 3. smell
 - ☐ 4. walking

Q.35 The pH of gastric juice is _____.

- Ans**
- ☒ 1. 1.2
 - ☐ 2. 2.2
 - ☐ 3. 7.4
 - ☐ 4. 10.0

Q.36 Which of the following helps Paramecium move food to the specific spot in the cell to obtain nutrition?

- Ans**
- ☐ 1. Parapodia
 - ☐ 2. Pseudopodia
 - ☐ 3. Flagella
 - ☒ 4. Cilia

Q.37 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All wigs are plastics.

All stones are plastics.

Conclusion:

(I) All plastics are wigs.

(II) Some wigs are stones.

- Ans**
- ☐ 1. Only conclusion (II) follows.
 - ☐ 2. Only conclusion (I) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☒ 4. Neither conclusion (I) nor (II) follows.

Q.38 The Mussalman Wakf (Repeal) Bill, 2024, was introduced in the Lok Sabha on ____.

- Ans**
- ☒ 1. 8 August 2024
 - ☐ 2. 5 August 2024
 - ☐ 3. 18 September 2024
 - ☐ 4. 8 October 2024

Q.39 A rectangular field 50 meters long and 42 meters broad contains a rectangular lawn inside it surrounded by a gravel path of uniform width. If the width of the path is 6 m, then the area of the path is

- Ans**
- ☐ 1. 240 m^2
 - ☐ 2. 720 m^2
 - ☐ 3. 480 m^2
 - ☒ 4. 960 m^2

Q.40 Two pipes can fill a tank in 20 and 24 minutes, respectively, and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 minutes. The capacity of the tank is:

- Ans**
- ☐ 1. 100 gallons
 - ☒ 2. 120 gallons
 - ☐ 3. 60 gallons
 - ☐ 4. 180 gallons

Q.41 A shopkeeper provides successive discounts of 2% and 5%, which are equivalent to a single discount of ____.

- Ans**
- ☐ 1. 7.1%
 - ☐ 2. 7%
 - ☐ 3. 6%
 - ☒ 4. 6.9%

Q.42 A box full of chocolates weighs 12.650 kg. If the weight of the chocolates is 6 kg 350 g, the weight of the empty box is:

- Ans**
- ☐ 1. 2850 g
 - ☐ 2. 2825 g
 - ☒ 3. 6300 g
 - ☐ 4. 6725 g

Q.43 If multiple fission :: many cells, then binary fission :: _____.

- Ans**
- ☐ 1. three cells
 - ☒ 2. two cells
 - ☐ 3. four cells
 - ☐ 4. one cell

Q.44 Which of the following is the correct formula for pentane?

- Ans**
- ☐ 1. C_5H_9
 - ☒ 2. C_5H_{12}
 - ☐ 3. C_5H_{10}
 - ☐ 4. C_5H_{14}

Q.45 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is S related to W if 'R - S x T + U - V x W'?

- Ans**
- ☐ 1. Sister
 - ☐ 2. Mother's mother
 - ☐ 3. Mother
 - ☒ 4. Father's mother

Q.46 Which of the following parts of a plant always grow downwards?

- Ans**
- ☐ 1. Leaves
 - ☐ 2. Branches
 - ☒ 3. Roots
 - ☐ 4. Buds

Q.47 Which state won the 14th Hockey India Senior Men National Championship, 2024?

- Ans**
- ☐ 1. Karnataka
 - ☐ 2. Punjab
 - ☒ 3. Odisha
 - ☐ 4. Haryana

Q.48 The speed of a car is 90 km/h in the first hour and 60 km/h in the second hour. What is the average speed of the car for the given two hours?

- Ans**
- ☒ 1. 75 km/h
 - ☐ 2. 72 km/h
 - ☐ 3. 85 km/h
 - ☐ 4. 80 km/h

Q.49 A soft iron bar is introduced inside the current carrying solenoid. What is the magnetic field inside a current-carrying solenoid when a bar made of soft iron is introduced inside the solenoid?

- Ans**
- ☐ 1. Will become zero
 - ☐ 2. Will remain same
 - ☐ 3. Will decrease
 - ☒ 4. Will increase

Q.50 In what direction is fluid pressure transmitted in any confined mass of fluid?

- Ans**
- ☒ 1. Undiminished in all directions.
 - ☐ 2. In one direction only.
 - ☐ 3. In two directions only.
 - ☐ 4. In three directions only.

Q.51 A building contractor employs 25 male and 15 female workers. To a male worker he pays ₹20 per hour and to a female worker ₹20 per hour. The average wage per hour paid by the contractor is:

- Ans**
- ☐ 1. ₹22
 - ☒ 2. ₹20
 - ☐ 3. ₹23
 - ☐ 4. ₹21

Q.52 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(45, 96, 141)

(12, 16, 28)

- Ans**
- ☐ 1. (13, 15, 30)
 - ☐ 2. (14, 17, 32)
 - ☒ 3. (16, 20, 36)
 - ☐ 4. (10, 7, 18)

Q.53 Who discovered free living cells in pond water for the first time?

- Ans**
- ☐ 1. Virchow in 1855
 - ☐ 2. Robert Hooke in 1665
 - ☒ 3. Leeuwenhoek in 1674
 - ☐ 4. Robert Brown in 1831

Q.54 Which is/are present at the growing tips of stems and roots and increase(s) the length of the stem and the root?

- Ans**
- ☐ 1. Only intercalary meristem
 - ☐ 2. Only lateral meristem
 - ☐ 3. Lateral meristem and intercalary meristem
 - ☒ 4. Only apical meristem

Q.55 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta + \cos \theta$ is _____.

- Ans**
- ☐ 1. -1
 - ☒ 2. $2\cos\theta$
 - ☐ 3. 0
 - ☐ 4. $\sec^2 \theta$

Q.56 If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then the cost of production of a table, the retail price of which is ₹1,265, will be:

- Ans**
- ☐ 1. ₹632.50
 - ☒ 2. ₹800.00
 - ☐ 3. ₹834.34
 - ☐ 4. ₹814.00

Q.57 If $A = 8^3 \times 5^4$ and $B = 8^5 \times 5^3$, then the value of $A \times B$ is:

- Ans**
- ☐ 1. $4^{15} \times 5^7$
 - ☐ 2. $8^{15} \times 5^{12}$
 - ☒ 3. $2^{24} \times 5^7$
 - ☐ 4. $2^{16} \times 5^8$

Q.58 A student in the lab observes the temperature of water on the Kelvin scale as 298K. What is the correct conversion of this temperature in the Celsius scale?

- Ans**
- ☐ 1. 32 degree Celsius
 - ☐ 2. 28 degree Celsius
 - ☒ 3. 25 degree Celsius
 - ☐ 4. 30 degree Celsius

Q.59 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. CYU
 - ☒ 2. FOZ
 - ☐ 3. TPL
 - ☐ 4. JFB

Q.60 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JF-BE-HG

MI-EH-KJ

- Ans**
- ☐ 1. PM-IL-OK
 - ☐ 2. PM-IL-OJ
 - ☐ 3. QM-IK-ON
 - ☒ 4. QM-IL-ON

Q.61 _____, on 9 September 2024, emphasised that safety and social audits of cities and institutions should be carried out to get a better idea about the lags and issues that currently exist in terms of ensuring women's safety in India.

- Ans**
- ☒ 1. The National Human Rights Commission (NHRC)
 - ☐ 2. The Self-Employed Women's Association (SEWA)
 - ☐ 3. The All India Federation of Women Lawyers (AIFWL)
 - ☐ 4. The Prajnya Trust for Women (PTW)

Q.62 While dissolving solute in a solution, when no more solute can be dissolved in a solution at a given temperature, it is called _____.

- Ans**
- ☐ 1. an unsaturated solution
 - ☐ 2. a colloidal solution
 - ☐ 3. a suspension
 - ☒ 4. a saturated solution

Q.63 In which of the following matter are particles held together with maximum force?

- Ans**
- ☐ 1. Water
 - ☐ 2. Ink of pen
 - ☐ 3. Perfume
 - ☒ 4. Iron stick

Q.64 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

318, 300, 150, 132, 66, 48, ?

- Ans**
- ☐ 1. 16
 - ☐ 2. 32
 - ☐ 3. 58
 - ☒ 4. 24

Q.65 In an aqueous solution, acid and base produce:

- Ans**
- ☒ 1. H^+ ions and OH^- ions, respectively
 - ☐ 2. Li^+ ions and CO_3^{2-} ions, respectively
 - ☐ 3. Na^+ ions and CO_3^{2-} ions, respectively
 - ☐ 4. K^+ ions and CO_3^{2-} ions, respectively

Q.66 If a pair of linear equations is consistent, then the lines will be:

- Ans**
- ☐ 1. always intersecting
 - ☐ 2. always coincident
 - ☒ 3. intersecting or coincident
 - ☐ 4. parallel

Q.67 Calcium oxide reacts vigorously with water to produce slaked lime, releasing a large amount of heat. This reaction is an example of which of the following types of reaction?

- Ans**
- ☒ 1. Combination reaction
 - ☐ 2. Double decomposition reaction
 - ☐ 3. Decomposition reaction
 - ☐ 4. Precipitation reaction

Q.68 Which of the following statements is true about a compound?

- Ans**
- ☐ 1. The new product formed has similar properties to the constituent substance.
 - ☐ 2. It is a physical change.
 - ☒ 3. The new product formed has totally different properties.
 - ☐ 4. The constituents can be separated by physical process.

Q.69 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged and '×' and '-' are interchanged?

$$9 - 2 \times 20 + 4 \div 11 = ?$$

- Ans**
- ☐ 1. 14
 - ☐ 2. 19
 - ☐ 3. 27
 - ☒ 4. 24

Q.70 All 37 people are standing in a row facing North. Arav is 14th from the right end while Varun is 21st from the left end. How many people are there between Arav and Varun?

- Ans**
- ☐ 1. 6
 - ☐ 2. 4
 - ☒ 3. 2
 - ☐ 4. 11

Q.71 If $a + \frac{1}{a} = 8$, then $a^2 + \frac{1}{a^2} = ?$

- Ans**
- ☒ 1. 62
 - ☐ 2. 66
 - ☐ 3. 68
 - ☐ 4. 64

Q.72 In a certain code language, 'email needs internet' is coded as 'ma bi cy' and 'radio needs waves' is coded as 'cy nu ph'. What is the code for 'needs' in the given code language?

- Ans**
- ☐ 1. bi
 - ☒ 2. cy
 - ☐ 3. ph
 - ☐ 4. nu

Q.73 Some seeds are dispersed when the fruits burst with sudden jerks and the seeds are scattered far from the parent plant. This happens in fruits of which of the following plants?

- Ans**
- ☐ 1. Xanthium and Urena
 - ☐ 2. Sunflower and Madar
 - ☒ 3. Castor and Balsam
 - ☐ 4. Drumstick and Maple

Q.74 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

(Left) 9 5 4 1 0 4 3 5 1 7 8 0 6 3 5 1 6 0 6 8 9 0 5 5 7 5 2 0 6 2 (Right)

What is the sum of the 5th digit from the left and the 2nd digit from the right?

- Ans**
- ☐ 1. 3
 - ☐ 2. 7
 - ☐ 3. 8
 - ☒ 4. 6

Q.75 Which of the following is correctly matched?

- Ans**
- ☐ 1. Bisexual flower - Watermelon
 - ☒ 2. Unisexual flower - Watermelon
 - ☐ 3. Unisexual flower - Mustard
 - ☐ 4. Bisexual flower - Papaya

Q.76 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JH-KI-LN

LJ-MK-NP

- Ans**
- ☒ 1. SQ-TR-UV
 - ☒ 2. OM-PN-QS
 - ☒ 3. RP-SQ-TU
 - ☒ 4. QO-RP-ST

Q.77 In the electrolytic refining process of metals, electrolyte is made up of which of the following?

- Ans**
- ☒ 1. Metal salt
 - ☒ 2. Impure metal
 - ☒ 3. Pure metal
 - ☒ 4. Combination of pure metal and metal salt

Q.78 A current of 2 A is flowing through a conductor of resistance $12\ \Omega$. Then the potential difference across the conductor is:

- Ans**
- ☒ 1. 6 V
 - ☒ 2. 35 V
 - ☒ 3. 12 V
 - ☒ 4. 24 V

Q.79 Which of the following statement is NOT true for the magnetic field lines inside a current-carrying solenoid?

- Ans**
- ☒ 1. The same at all points inside the solenoid
 - ☒ 2. Uniform inside the solenoid
 - ☒ 3. Along the axis and parallel to each other
 - ☒ 4. Ellipsoidal and intersects with each other

Q.80 The ratio of milk to water in 10 litres of a mixture is 3 : 2. The quantity of milk in the mixture will be:

- Ans**
- ☒ 1. 6 litres
 - ☒ 2. 10 litres
 - ☒ 3. 5 litres
 - ☒ 4. 4 litres

Q.81 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 1 6 1 9 8 8 1 3 8 4 8 6 8 1 9 2 3 3 4 6 2 8 4 5 1 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an even digit?

- Ans**
- ☒ 1. 1
 - ☒ 2. 4
 - ☒ 3. 0
 - ☒ 4. 2

Q.82 The ____ on 5 April 2024 launched India's first-ever book on Sports Psychology.

- Ans**
- ✓ 1. International Institute of Sports Management (IISM)
 - ✗ 2. International School of Sports Management (ISSM)
 - ✗ 3. National Institute of Sports Management (NISM)
 - ✗ 4. Tamil Nadu Physical Education and Sports University (TNPES)

Q.83 If a ligament connects two bones, which of the following connects muscles to bones?

- Ans**
- ✗ 1. Cartilage
 - ✗ 2. Blood
 - ✓ 3. Tendon
 - ✗ 4. Fibroblast

Q.84 Ozone shields the surface of the earth from ultraviolet (UV) radiation from the Sun and the amount of ozone in the atmosphere begins to drop sharply due to which of the following synthetic chemicals?

- Ans**
- ✗ 1. Pesticides
 - ✗ 2. Carbon monoxide
 - ✗ 3. Insecticides
 - ✓ 4. Chlorofluorocarbons

Q.85 If a regular polygon has 20 diagonals, then the sum of its interior angles is:

- Ans**
- ✗ 1. 1200°
 - ✗ 2. 960°
 - ✗ 3. 1440°
 - ✓ 4. 1080°

Q.86 Amit starts from Point A and drives 35 km towards East. He then takes a right turn, drives 17 km, turns right and drives 15 km. He then takes a left turn and drives 13 km. He takes a final right turn, drives 20 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ✓ 1. 30 km towards North
 - ✗ 2. 30 km towards East
 - ✗ 3. 28 km towards South
 - ✗ 4. 28 km towards North

Q.87 In what duration will a sum of ₹2,100 fetch a simple interest of ₹1,050 at 10% per annum rate of interest?

- Ans**
- ✗ 1. 10 years
 - ✗ 2. 6 years
 - ✗ 3. 8 years
 - ✓ 4. 5 years

Q.88 How long will it take for ₹1,500 to become ₹1,860 at 8% per annum simple interest?

- Ans**
- ✓ 1. 3 years
 - ✗ 2. 2 years
 - ✗ 3. $4\frac{3}{4}$ years
 - ✗ 4. $4\frac{1}{2}$ years

Q.89 Ishan is younger than Surya by 3 years. If the ages of Ishan and Surya are in the ratio 7 : 8, then how old is Ishan?

Ans ✗ 1. 18 years

✓ 2. 21 years

✗ 3. 27 years

✗ 4. 24 years

Q.90 A student has an eye-power of $-0.5D$. What is the focal length and type of lens of spectacles that she should use for correcting this defect?

Ans ✓ 1. -2.0 m, concave lens

✗ 2. 2.5 m, convex lens

✗ 3. 2.0 m, convex lens

✗ 4. -2.5 m, concave lens

Q.91 When an action or a movement is to be performed, which tissue will do the final job in animals?

Ans ✗ 1. Epithelial tissue

✓ 2. Muscular tissue

✗ 3. Meristematic tissue

✗ 4. Connective tissue

Q.92 A cistern is filled by Pipe A and Pipe B together in 2.4 hours. Pipe A alone can fill the cistern at the rate of 100 litres per hour. Pipe B alone can fill the cistern in 4 hours. What is the capacity of the cistern?

Ans ✗ 1. 1000 litres

✓ 2. 600 litres

✗ 3. 500 litres

✗ 4. 1200 litres

Q.93 The PARAM Rudra supercomputer was inaugurated at which institute on 27 September 2024?

Ans ✓ 1. S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata

✗ 2. Tata Institute of Fundamental Research (TIFR), Mumbai

✗ 3. Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru

✗ 4. Indian Institute of Science (IISc), Bengaluru

Q.94 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

QSU, PRT, OQS, NPR, ?

Ans ✓ 1. MOQ

✗ 2. OMQ

✗ 3. MQO

✗ 4. OQM

Q.95 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✓ 1. PVZ

✗ 2. AFK

✗ 3. TYD

✗ 4. VAF

Q.96 A bus travel the first 60 m in 30 s and then another 80 m in 40 s. Calculate the average speed of the bus in m s^{-1} .

- Ans**
- ✓ 1. 2 m s^{-1}
 - ✗ 2. 0.15 m s^{-1}
 - ✗ 3. 2.28 m s^{-1}
 - ✗ 4. 1 m s^{-1}

Q.97 Which of the following compounds is NOT formed when ferrous sulphate is heated?

- Ans**
- ✓ 1. Sulphuric acid
 - ✗ 2. Ferric oxide
 - ✗ 3. Sulphur trioxide
 - ✗ 4. Sulphur dioxide

Q.98 In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The river running through Town A is heavily polluted, affecting aquatic life and posing risks to public health due to industrial waste disposal and untreated sewage.

Courses of Action:

I. Invest in building advanced wastewater treatment plants to treat industrial effluents and sewage before releasing them into the river.

II. Launch a community-led initiative to organise regular river clean up drives involving volunteers from Town A.

- Ans**
- ✗ 1. Neither I nor II follows.
 - ✓ 2. Both I and II follow.
 - ✗ 3. Only I follows.
 - ✗ 4. Only II follows.

Q.99 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All cups are plates.

All plates are glasses.

Conclusions:

(I) Some plates are not cups.

(II) All cups are glasses.

- Ans**
- ✓ 1. Only conclusion II follows
 - ✗ 2. Neither conclusion I nor II follows
 - ✗ 3. Both conclusions I and II follow
 - ✗ 4. Only conclusion I follows

Q.100 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(12, 3, 9)

(28, 7, 21)

Ans  1. (44, 12, 36)

 2. (48, 12, 26)

 3. (48, 14, 36)

 4. (48, 12, 36)

2024/12/28-14:21:39



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Kozhikode
Test Date	27/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 If the surface area is increased, the rate of evaporation is:

- Ans
- ☒ 1. decreased
 - ☒ 2. First increases then decreases
 - ☒ 3. constant
 - ☒ 4. increased

Q.2 Which of the following is used in the oxidation of alcohol into carboxylic acid?

- Ans
- ☒ 1. Palladium
 - ☒ 2. Alkaline potassium permanganate
 - ☒ 3. Nickel
 - ☒ 4. Zinc

Q.3 Which of the following is a property of isomers in organic chemistry?

- Ans
- ☒ 1. They have the same molecular formula but different structural arrangements.
 - ☒ 2. They have different molecular formulas but the same structural arrangement.
 - ☒ 3. They have no carbon atoms in their structure.
 - ☒ 4. They have the same molecular formula and the same structural arrangement.

Q.4 If each vowel in the word SHOWING is changed to the letter immediately preceding it in the English alphabetical order and each consonant is changed to the letter immediately following it in the English alphabetical order, then how many letters in the original word will also appear in the group of letters thus formed?

- Ans
- ☒ 1. 1
 - ☒ 2. 4
 - ☒ 3. 2
 - ☒ 4. 3

Q.5 If 85% of a number is added to 24, then the result is the same number. 75% of the same number is:

- Ans**
- ☐ 1. 160
 - ☒ 2. 120
 - ☐ 3. 90
 - ☐ 4. 150

Q.6 Which of the following statements is/are correct?

Statements:

I) A current carrying coil produces magnetic field.

II) A current carrying solenoid behaves like a bar magnet.

- Ans**
- ☐ 1. Statement II only
 - ☐ 2. Statement I only
 - ☒ 3. Both Statements I and II
 - ☐ 4. Neither Statement I nor II

Q.7 Rahul can do a piece of work in 20 days whereas Rohan can do the same work in 30 days. Both started the work together and worked for 6 days with full efficiency, and in the next 6 days with half of their efficiencies. In how many days will the remaining work be finished if both work with their full efficiencies for the remaining period?

- Ans**
- ☐ 1. 5 days
 - ☒ 2. 3 days
 - ☐ 3. 7 days
 - ☐ 4. 10 days

Q.8 There are two sections A and B of a class, consisting of 36 and 44 students, respectively. If the average weight of students of section A is 40 kg and that of section B is 35 kg, find the average weight of the whole class.

- Ans**
- ☐ 1. 36.75 kg
 - ☐ 2. 36.25 kg
 - ☐ 3. 37.75 kg
 - ☒ 4. 37.25 kg

Q.9 The male organ, the penis, helps in transfer of:

- Ans**
- ☐ 1. polar bodies
 - ☒ 2. sperms
 - ☐ 3. zygotes
 - ☐ 4. eggs

Q.10 Simplify the following expression:

$$\frac{\sin \theta}{1 + \cos \theta} + \frac{1 + \cos \theta}{\sin \theta}$$

- Ans**
- ☐ 1. $2 \sec \theta$
 - ☐ 2. $2 \cos \theta$
 - ☒ 3. $2 \operatorname{cosec} \theta$
 - ☐ 4. $2 \sin \theta$

Q.11 Copper is more reactive than which of the following elements?

- Ans
- ☐ 1. Calcium
 - ☐ 2. Sodium
 - ☒ 3. Silver
 - ☐ 4. Potassium

Q.12 Which of the following was a significant outcome of the informal meeting between Xi Jinping and Narendra Modi at the 2023 BRICS summit?

- Ans
- ☒ 1. A commitment to de-escalate tensions along the contested border
 - ☐ 2. Agreement on joint military patrols
 - ☐ 3. A pledge to resolve territorial disputes through war
 - ☐ 4. A decision to increase trade between the two countries

Q.13 Which of the following cell organelles have their own DNA and ribosomes?

- Ans
- ☐ 1. Lysosomes
 - ☐ 2. Golgi apparatus
 - ☒ 3. Mitochondria
 - ☐ 4. Endoplasmic reticulum

Q.14 The HCF and LCM of two numbers are 6 and 1824, respectively. If one number is 96, then the other number is:

- Ans
- ☐ 1. 192
 - ☐ 2. 112
 - ☐ 3. 216
 - ☒ 4. 114

Q.15 Ram applied the brakes to his cycle and an acceleration of 2 m s^{-2} is produced in the opposite direction to the motion. If the cycle takes 10 s to stop after the application of brakes, calculate the distance it travels during this time.

- Ans
- ☒ 1. 100 m
 - ☐ 2. 150 m
 - ☐ 3. 50 m
 - ☐ 4. 200 m

Q.16 In males, if the _____ is surgically cut, sperm transfer will be prevented.

- Ans
- ☐ 1. fallopian tube
 - ☐ 2. prostate gland
 - ☒ 3. vas deferens
 - ☐ 4. seminal vesicle

Q.17 Which of the following states of matter is/are highly compressible?

- Ans
- ☒ 1. The gaseous state
 - ☐ 2. The solid state
 - ☐ 3. The liquid state
 - ☐ 4. Both solid state and liquid state

Q.18 The sum of the present ages of Sarala and Kishore is 26 years. If 3 years ago, Kishore was $\frac{3}{2}$ times as old as Sarala, then the present age of Sarala is:

- Ans**
- ☐ 1. 10 years
 - ☐ 2. 12 years
 - ☐ 3. 9 years
 - ☒ 4. 11 years

Q.19 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

52, 34, 69, 56, 86, 78, 103, ?

- Ans**
- ☒ 1. 100
 - ☐ 2. 108
 - ☐ 3. 120
 - ☐ 4. 94

Q.20 ROSP is related to WTXU in a certain way based on the English alphabetical order. In the same way, TQUR is related to YVZW. To which of the following options is OLPM related, following the same logic?

- Ans**
- ☐ 1. TQRU
 - ☒ 2. TQUR
 - ☐ 3. QTRU
 - ☐ 4. QTUR

Q.21 The Chlor-alkali process is used for the formation of which of the following?

- Ans**
- ☒ 1. Sodium hydroxide
 - ☐ 2. Sodium bicarbonate
 - ☐ 3. Sodium carbonate
 - ☐ 4. Sodium chloride

Q.22 What did Rutherford's gold foil experiment conclude about the structure of an atom?

- Ans**
- ☐ 1. Atoms are composed of protons, neutrons, and electrons in a random arrangement.
 - ☐ 2. Atoms are indivisible and are solid spheres.
 - ☒ 3. Atoms consist of a positively charged nucleus and negatively charged electrons.
 - ☐ 4. Atoms have a uniform positive charge spread throughout their volume.

Q.23 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 Ω 2 * £ 1 + & % 4 6 @ 8 \$ 7 5 9 # 1 @ 5 (Right)

If all the symbols are dropped from the series, which of the following will be seventh from the left?

- Ans**
- ☒ 1. 7
 - ☐ 2. 6
 - ☐ 3. 4
 - ☐ 4. 8

Q.24 The wickets taken by a bowler in 10 cricket matches are 2, 6, 4, 5, 0, 3, 1, 3, 2, 3. The median of the data is:

- Ans**
- ☐ 1. 2
 - ☐ 2. 0
 - ☐ 3. 1
 - ☒ 4. 3

Q.25 A convex mirror created a highly diminished, point-sized virtual image, then the position of the image is:

- Ans**
- ☒ 1. in front of the mirror at the focus F
 - ☒ 2. behind the mirror at the focus F
 - ☒ 3. in front of the mirror at the centre of curvature C
 - ☒ 4. behind the mirror at the centre of curvature C

Q.26 If $x + y = 20$ and $xy = 84$, find the value of $x^2 + y^2$.

- Ans**
- ☒ 1. 212
 - ☒ 2. 264
 - ☒ 3. 232
 - ☒ 4. 244

Q.27 The marked price of an item was ₹2,000, but the shopkeeper offered successive discounts of 20% and 15% on its sale. How much did he finally sell the item for?

- Ans**
- ☒ 1. ₹1,360
 - ☒ 2. ₹1,260
 - ☒ 3. ₹1,280
 - ☒ 4. ₹1,380

Q.28 If the area of an equilateral triangle is $25\sqrt{3}$ sq cm, then perimeter of the triangle is:

- Ans**
- ☒ 1. 12 cm
 - ☒ 2. 24 cm
 - ☒ 3. 10 cm
 - ☒ 4. 30 cm

Q.29 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health.

Reasons:

- I. Several factors can play a role in gaining and retaining excess weight. These include diet, lack of exercise, environmental factors, and genetics.
- II. There are a number of scientifically proven ways you can keep the weight off, ranging from exercising, a proper diet to controlling stress.

- Ans**
- ☒ 1. Both I and II are possible reasons.
 - ☒ 2. Neither I nor II is a possible reason.
 - ☒ 3. Only II is a possible reason.
 - ☒ 4. Only I is a possible reason.

Q.30 Match the UNESCO World Heritage Sites of India (declared between 2021 and 2024) in List I with their location states in List II and select the correct answer.

List I (UNESCO World Heritage Sites) List II (States)

- (1) Kakatiya Rudreshwara (Ramappa) Temple (A) Telangana
- (2) Santiniketan, India (B) West Bengal
- (3) Sacred Ensemble of Hoysalas (C) Karnataka
- (4) Charaideo Moidam (D) Assam

- Ans**
- ☒ 1. 1 - A, 2 - B, 3 - C, 4 - D
 - ☒ 2. 1 - A, 2 - C, 3 - B, 4 - D
 - ☒ 3. 1 - D, 2 - B, 3 - C, 4 - A
 - ☒ 4. 1 - D, 2 - C, 3 - B, 4 - A

Q.31 The planets go around the sun due to _____ force.

- Ans
- ☐ 1. Frictional
 - ☐ 2. Electrical
 - ☐ 3. Magnetic
 - ☒ 4. Gravitational

Q.32 Which institute hosted International Chess Federation (FIDE)-rated Rapid Chess Tournament in March 2024?

- Ans
- ☐ 1. IIT Hyderabad
 - ☒ 2. IIT Madaras
 - ☐ 3. IIT Delhi
 - ☐ 4. IIT Bombay

Q.33 The most scattered colour of the sun light when it enters the earth's atmosphere is _____.

- Ans
- ☐ 1. green
 - ☐ 2. pink
 - ☐ 3. red
 - ☒ 4. blue

Q.34 The position(s) of how many letters will remain unchanged if each of the letters in the word DRAWING is arranged in the English alphabetical order ?

- Ans
- ☐ 1. 1
 - ☐ 2. 2
 - ☒ 3. 0
 - ☐ 4. 3

Q.35 Plasma membrane is made up of _____.

- Ans
- ☐ 1. Only cellulose
 - ☐ 2. Only lipids
 - ☒ 3. Both proteins and lipids
 - ☐ 4. Only proteins

Q.36 In November 2024, which Indian Institutes of Technology (IIT) unveiled a Mechanical Knee Rehabilitation Device, which is a mechanical Completely Mechanical Passive (CPM) machine unlike traditional motorised CPM machines, eliminating the need for electricity, batteries and motors?

- Ans
- ☐ 1. IIT Mandi
 - ☐ 2. IIT Delhi
 - ☒ 3. IIT Ropar
 - ☐ 4. IIT Kanpur

Q.37 A sum of money doubles itself on compound interest in 15 years. In what duration will it become 8 times of itself, considering annual compounding?

- Ans
- ☐ 1. 60 years
 - ☐ 2. 40 years
 - ☐ 3. 30 years
 - ☒ 4. 45 years

Q.38 Which of the following Indian languages were given the status of classical languages of India in October 2024?

- Ans** ✓ 1. Marathi, Pali, Prakrit, Assamese and Bengali
✗ 2. Marathi, Malayalam, Prakrit, Assamese and Bengali
✗ 3. Malayalam, Odia, Prakrit, Assamese and Bengali
✗ 4. Marathi, Odia, Prakrit, Assamese and Bengali

Q.39 By selling an article for ₹19.50, a dealer makes a profit of 30%. By how much should he increase his selling price so as to make a profit of 40%?

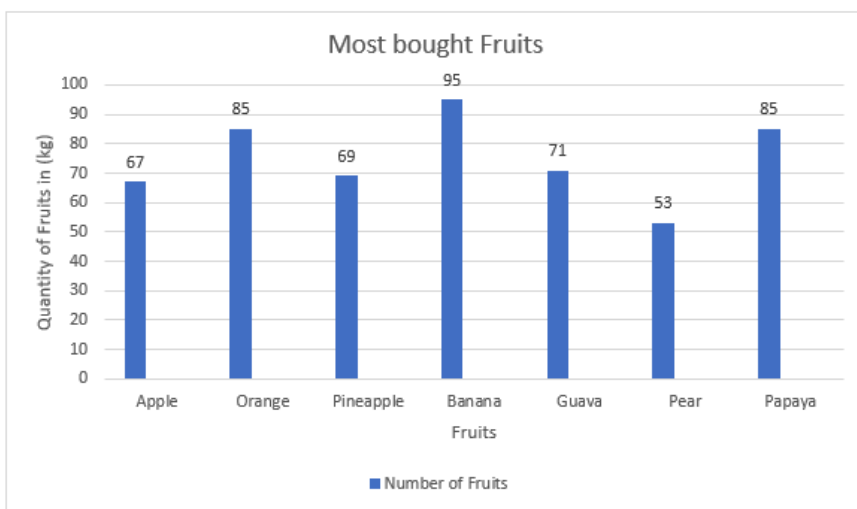
- Ans** ✓ 1. ₹1.50
✗ 2. ₹3
✗ 3. ₹2
✗ 4. ₹1.75

Q.40 Which of the following statements is/are correct related to respiration?

- (i) Pyruvate is converted into ethanol and carbon dioxide in yeast during fermentation.
(ii) The break-down of pyruvate using oxygen takes place in chloroplast.
(iii) In muscle cells, pyruvate is converted into lactic acid.

- Ans** ✓ 1. Only (i) and (iii)
✗ 2. (i), (ii) and (iii)
✗ 3. Only (i) and (ii)
✗ 4. Only (i)

Q.41 Study the following bar graph and answer the question below.



What is the average weight of fruits bought?

- Ans** ✗ 1. 80 kg
✓ 2. 75 kg
✗ 3. 57 kg
✗ 4. 85 kg

Q.42 What is the key objective of the Swachh Diwali Shubh Diwali campaign 2024?

- Ans**
- ☐ 1. Enhancing rural electrification
 - ☐ 2. Increasing urban industrialisation
 - ☒ 3. Promoting cleanliness and sustainability during Diwali
 - ☐ 4. Celebrating Diwali with maximum decorations

Q.43 Complete the given statement by selecting the correct option.

Isobars have different atomic numbers but the _____.

- Ans**
- ☐ 1. same number of electrons
 - ☐ 2. different atomic mass
 - ☐ 3. same number of protons
 - ☒ 4. same atomic mass

Q.44 A pipe can fill a tank in 8 hours. Another pipe can empty the filled tank in 72 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☐ 1. 9
 - ☒ 2. 3
 - ☐ 3. 12
 - ☐ 4. 6

Q.45 Suresh spends 30% of his income on petrol, $\frac{1}{4}$ of the remaining income on house rent, and the balance on food. If he spends ₹300 on petrol, then what is his expenditure on house rent?

- Ans**
- ☐ 1. ₹525
 - ☐ 2. ₹1,000
 - ☐ 3. ₹675
 - ☒ 4. ₹175

Q.46 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

NPR, MOQ, LNP, KMO, ?

- Ans**
- ☐ 1. NJL
 - ☒ 2. JLN
 - ☐ 3. JNL
 - ☐ 4. NLJ

Q.47 Spinal cord is made up of which tissue?

- Ans**
- ☒ 1. Nervous tissue
 - ☐ 2. Muscular tissue
 - ☐ 3. Epithelial tissue
 - ☐ 4. Connective tissue

Q.48 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All tablets are screens.

All screens are gadgets.

Conclusions:

(I) Some gadgets are tablets.

(II) No gadgets are tablets.

- Ans**
- ✓ 1. Only conclusion (I) follows
 - ✗ 2. Both conclusions (I) and (II) follow
 - ✗ 3. Neither conclusion (I) nor (II) follows
 - ✗ 4. Only conclusion (II) follows

Q.49 If the magnification of any mirror is $+2.3$, which type of mirror is it?

- Ans**
- ✗ 1. Planoconvex mirror
 - ✓ 2. Concave mirror
 - ✗ 3. Convex mirror
 - ✗ 4. Plane mirror

Q.50 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✗ 1. MI-LN
 - ✗ 2. EA-DF
 - ✗ 3. GC-FH
 - ✓ 4. JF-IL

Q.51 Which state's Governor launched the book titled 'Sri Rama in Tamilagam – An Inseparable Bond' in September 2024?

- Ans**
- ✗ 1. Karnataka
 - ✓ 2. Tamil Nadu
 - ✗ 3. Kerala
 - ✗ 4. Telangana

Q.52 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

16, 53

21, 68

- Ans**
- ✗ 1. 12, 31
 - ✓ 2. 19, 62
 - ✗ 3. 25, 70
 - ✗ 4. 28, 84

Q.53 What is the unit of universal gravitational constant (G)?

- Ans**
- ☐ 1. $N m^2$
 - ☐ 2. $N m^2 kg^{-1}$
 - ☒ 3. $N m^2 kg^{-2}$
 - ☐ 4. $N m^2 kg$

Q.54 The area of the square formed on the diagonal of a rectangle as its side is $108\frac{1}{9}\%$ more than the area of the rectangle. If the perimeter of the rectangle is 28 units, find the difference between the sides of the rectangle?

- Ans**
- ☒ 1. 2
 - ☐ 2. 4
 - ☐ 3. 8
 - ☐ 4. 6

Q.55 Conventionally, the germ-cell containing the stored food is called the:

- Ans**
- ☐ 1. immature egg
 - ☒ 2. female gamete
 - ☐ 3. male gamete
 - ☐ 4. motile gamete

Q.56 Bihar state has what percentage of poor population of the country as per Economic Survey of India 2023-24?

- Ans**
- ☐ 1. Between 26% and 30%
 - ☒ 2. Between 16% and 25%
 - ☐ 3. Between 11% and 15%
 - ☐ 4. Between 5% and 10%

Q.57 The twinkling of stars is due to _____.

- Ans**
- ☐ 1. the interference of light from a star and moon
 - ☒ 2. the atmospheric refraction of light from the star
 - ☐ 3. the atmospheric reflection of light from the stars
 - ☐ 4. the interference of light from different stars

Q.58 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. BY – WO
 - ☐ 2. ZW – UM
 - ☒ 3. GK – PW
 - ☐ 4. TQ – OG

Q.59 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

SOLD - DLSO - SLOD

TEAR - RATE - TAER

- Ans**
- ☒ 1. LANG - ANLG - ANGL
 - ☒ 2. GROW - GORW - WORG
 - ☒ 3. VOID - DIVO - VIOD
 - ☒ 4. SALE - ELSA - ALSE

Q.60 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 40 :: 18 : Y

- Ans**
- ☒ 1. X = 20, Y = 40
 - ☒ 2. X = 22, Y = 32
 - ☒ 3. X = 24, Y = 38
 - ☒ 4. X = 28, Y = 56

Q.61 The Union Budget 2024-25 introduced the Prime Minister's package, comprising how many schemes and initiatives, aimed at providing employment, skilling, and other opportunities to 4.1 crore youth over a five-year period?

- Ans**
- ☒ 1. Six
 - ☒ 2. Four
 - ☒ 3. Five
 - ☒ 4. Three

Q.62 Two trains of length 120 m and 280 m are running towards each other on parallel lines at 42 km/h and 30 km/h, respectively. In how much time will they be clear of each other from the moment they meet?

- Ans**
- ☒ 1. 21 sec
 - ☒ 2. 20 sec
 - ☒ 3. 25 sec
 - ☒ 4. 10 sec

Q.63 Three numbers are in the ratio 1 : 2 : 5, and their LCM is 1600. The HCF of the numbers is:

- Ans**
- ☒ 1. 800
 - ☒ 2. 160
 - ☒ 3. 480
 - ☒ 4. 320

Q.64 Which of the following is a saturated carbon compound?

- Ans**
- ☒ 1. Alkane
 - ☒ 2. Alkyne
 - ☒ 3. Alkene
 - ☒ 4. Ethylene

Q.65 Where was the first leg of the 2024 Khelo India Winter Games held?

- Ans**
- ☐ 1. Jammu and Kashmir
 - ☐ 2. Uttarakhand
 - ☐ 3. Himachal Pradesh
 - ☒ 4. Ladakh

Q.66 Which of the following represents voltage?

- Ans**
- ☐ 1. Work done $\times$ Charge
 - ☒ 2. $\frac{\text{Work done}}{\text{Current} \times \text{Time}}$
 - ☐ 3. Work done $\times$ Charge $\times$ Time
 - ☐ 4. $\frac{\text{Work done}}{\text{Current} \times \text{Charge}}$

Q.67 Which of the following pairs of the name reaction and its example is/are correctly matched?

- (a) Saponification: The reaction of ethanol with conc. H_2SO_4 to form ethene.
- (b) Esterification: The reaction of ethanoic acid with ethanol in the presence of acid catalyst to form ester.
- (c) Dehydration: The reaction of esters with sodium hydroxide to form sodium salt of carboxylic acid.

- Ans**
- ☐ 1. (a), (b) and (c) are correct.
 - ☐ 2. Only (c) is correct.
 - ☒ 3. Only (b) is correct.
 - ☐ 4. Only (a) is correct.

Q.68 If $1.6 : 0.6 :: 0.6 : x$, find the value of x.

- Ans**
- ☐ 1. 0.98
 - ☐ 2. 0.275
 - ☒ 3. 0.225
 - ☐ 4. 0.25

Q.69 The sum of all the prime numbers between 51 and 100 is:

- Ans**
- ☐ 1. 683
 - ☐ 2. 687
 - ☐ 3. 724
 - ☒ 4. 732

Q.70 Which of the following statements is/are NOT correct?

- (i) Resistance of a conductor is independent of temperature.
- (ii) The more the voltage across a resistor, the more is the current flowing through it.
- (iii) The S.I unit of resistance is ohm.

- Ans**
- ☐ 1. Only (ii)
 - ☐ 2. Both (ii) and (iii)
 - ☒ 3. Only (i)
 - ☐ 4. Both (i) and (ii)

Q.71 Where does the oxygen-rich blood from the lungs come into the heart?

- Ans**
- ☐ 1. the pulmonary arteries
 - ☐ 2. the left ventricle
 - ☐ 3. the pulmonary veins
 - ☒ 4. the left atrium

Q.72 In a certain code language,
'P + Q' means 'P is the son of Q',
'P - Q' means 'P is the husband of Q',
'P x Q' means 'P is the daughter of Q' and
'P ÷ Q' means 'P is the wife of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☐ 1. Son
 - ☐ 2. Brother
 - ☐ 3. Son's son
 - ☒ 4. Daughter's son

Q.73 Gaurav starts from point A and drives 3 km South. He then takes a left turn and drives 2 km. He takes another left turn and drives 2 km. He then takes a right turn and drives 3 km. He takes a final left turn and drives 1 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 2 km South
 - ☐ 2. 3 km West
 - ☒ 3. 5 km West
 - ☐ 4. 4 km South

Q.74 Which of the following statements is/are correct?

1. Some metals can be beaten into thin sheets. This property is called malleability.
2. Metals can be drawn into thin wires.
3. Metals are good conductors of heat.

- Ans**
- ☐ 1. Only 1 and 3
 - ☒ 2. 1, 2 and 3
 - ☐ 3. Only 1 and 2
 - ☐ 4. Only 1

Q.75 D, E, F, G, L, M and N are sitting around a circular table facing the centre. N sits third to the left of M. L sits second to the left of G. M is an immediate neighbour of both E and L. D is not an immediate neighbour of N. How many people sit between F and L when counted from the right of F?

- Ans**
- ☐ 1. One
 - ☐ 2. Three
 - ☒ 3. Two
 - ☐ 4. Four

Q.76 Amphibians have a _____ chambered heart.

- Ans**
- ☐ 1. Two
 - ☒ 2. Three
 - ☐ 3. One
 - ☐ 4. Four

Q.77 Biodegradable material are broken down into simpler material by the action of which of the following?

- Ans**
- ☐ 1. Sunlight
 - ☐ 2. Virus
 - ☐ 3. Wind
 - ☒ 4. Bacteria

Q.78 In a certain code language, 'POKED' is coded as '85263' and 'TOKED' is coded as '36584'. What is the code for 'T' in the given code language?

- Ans**
- ☐ 1. 8
 - ☒ 2. 4
 - ☐ 3. 5
 - ☐ 4. 3

Q.79 The ratio of the number of boys to that of the girls in a school is 9 : 7. If the number of girls in the school is 189, then the number of boys in that school will be:

- Ans**
- ☐ 1. 147
 - ☒ 2. 243
 - ☐ 3. 168
 - ☐ 4. 126

Q.80 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

PRT, QSU, RTV, SUW, ?

- Ans**
- ☐ 1. TXV
 - ☐ 2. VTX
 - ☐ 3. VXT
 - ☒ 4. TVX

Q.81 Among the following which is NOT a homologous compound as compared to others?

- Ans**
- ☐ 1. CH_3OH
 - ☐ 2. $\text{C}_3\text{H}_7\text{OH}$
 - ☐ 3. $\text{C}_2\text{H}_5\text{OH}$
 - ☒ 4. $\text{C}_6\text{H}_5\text{OH}$

Q.82 Which of the following is a unicellular ciliary organism?

- Ans**
- ☒ 1. Paramecium
 - ☐ 2. Amoeba
 - ☐ 3. Ticks
 - ☐ 4. Leeches

Q.83 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All screens are mouse.

Some mouses are keyboards.

Conclusions:

(I) Some screens are keyboards.

(II) No screen is a keyboard.

Ans ✓ 1. Neither conclusion (I) nor (II) follows

✗ 2. Both conclusions (I) and (II) follow

✗ 3. Only conclusion (II) follows

✗ 4. Only conclusion (I) follows

Q.84 If the radius of a sphere is halved, then the new volume will become _____ the original volume.

Ans ✓ 1. $\frac{1}{8}$ times

✗ 2. $\frac{1}{4}$ times

✗ 3. 8 times

✗ 4. 4 times

Q.85 Seven people, A, B, E, F, P, Q and R are sitting in a row, facing north. Only B sits to the left of A. Only four people sit between B and Q. Only E sits between R and P and R is not an immediate neighbour of Q. Who sits at the extreme right of the row?

Ans ✗ 1. P

✓ 2. F

✗ 3. R

✗ 4. E

Q.86 In a row of 51 students, facing north, Tinu is 24th from the left end. If Shivangi is 11th to the right of Tinu, what is Shivangi's position from the right end of the row?

Ans ✗ 1. 18th

✗ 2. 16th

✓ 3. 17th

✗ 4. 15th

Q.87 The highest common factor of any two distinct prime numbers is:

Ans ✗ 1. 2

✗ 2. 0

✗ 3. 3

✓ 4. 1

Q.88 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged?

$$13 + 11 \div 32 \times 4 - 10 = ?$$

Ans ☐ 1. 90

☒ 2. 91

☐ 3. 94

☐ 4. 85

Q.89 The apparent position of a star keeps on changing slightly because:

Ans ☐ 1. Different layers of the atmosphere are of same density

☒ 2. Different layers of the atmosphere have different density

☐ 3. Stars are very close to the surface of the earth.

☐ 4. Star doesn't have its own light

Q.90 A man has invested ₹75,000 at a rate of $7\frac{1}{2}\%$ per annum simple interest for 6 years. Find the amount that he will receive after 6 years.

Ans ☐ 1. ₹75,000

☐ 2. ₹69,600

☐ 3. ₹1,12,500

☒ 4. ₹1,08,750

Q.91 The present age of a teacher is $1\frac{1}{2}$ times the sum of the present ages of his two students. Six years hence, the ratio of his age to the sum of the ages of both the students will be 6 : 5. The present age of the teacher is:

Ans ☐ 1. 50 years

☐ 2. 36 years

☐ 3. 45 years

☒ 4. 42 years

Q.92 Variation is useful for the survival of species over time. These variations occur due to errors in:

Ans ☐ 1. formation of red blood cells

☐ 2. differentiation of white blood cells

☐ 3. formation of neurons

☒ 4. DNA copying

Q.93 In a certain code language, 'REST' is coded as '4529' and 'HERS' is coded as '5279'. What is the code for 'H' in the given code language?

Ans ☒ 1. 7

☐ 2. 2

☐ 3. 5

☐ 4. 9

Q.94 If the magnetic field due to a single turn circular coil is B. Then the value of magnetic field due to a circular coil with 10 turns will be:
(Other parameters are to be kept same)

Ans ☒ 1. 10B

☐ 2. 5B

☐ 3. B

☐ 4. 100B

Q.95 Which of the following glands secretes trypsin enzyme?

- Ans
- ✓ 1. Pancreas
 - ✗ 2. Salivary gland
 - ✗ 3. Liver
 - ✗ 4. Gastric gland

Q.96 The value of M, satisfying $2^3 \times 3^3 \times 6^3 = 6^M$ is:

- Ans
- ✗ 1. 2
 - ✓ 2. 6
 - ✗ 3. 4
 - ✗ 4. 8

Q.97 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$44 \text{ A } 4 \text{ C } 12 \text{ B } 2 \text{ D } 1 = ?$$

- Ans
- ✓ 1. 34
 - ✗ 2. 33
 - ✗ 3. 32
 - ✗ 4. 31

Q.98 Out of the following, which is a unit used for measuring the amount of work done on a body:

- Ans
- ✗ 1. Newton
 - ✗ 2. Meter
 - ✗ 3. Kilogram
 - ✓ 4. Joule

Q.99 Identify the nature of the functional group present in butanal.

- Ans
- ✗ 1. Alcohol
 - ✗ 2. Ketone
 - ✗ 3. Alkene
 - ✓ 4. Aldehydes

Q.100 Which of the following scientists made the following statement?
"All cells arise from preexisting cells."

- Ans
- ✗ 1. Purkinje
 - ✓ 2. Rudolf Virchow
 - ✗ 3. Robert Brown
 - ✗ 4. Robert Hooke



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Atchutapuram
Test Date	27/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The average temperature for Monday, Tuesday, Wednesday, and Thursday was 48°C , and for Tuesday, Wednesday, Thursday, and Friday was 46°C . If the temperature on Monday was 42°C , find the temperature on Friday.

- Ans**
- ☒ 1. 40°C
 - ☒ 2. 38°C
 - ☒ 3. 36°C
 - ☒ 4. 34°C

Q.2 The age of a mother six years ago was six times the age of her daughter, at that time. Three years hence, the mother will be thrice as old as her daughter. What is the difference between the present age of the mother and her daughter?

- Ans**
- ☒ 1. 24 years
 - ☒ 2. 42 years
 - ☒ 3. 30 years
 - ☒ 4. 36 years

Q.3 What is the position of the image formed by a concave mirror if the object is placed just beyond the centre of curvature of the mirror?

- Ans**
- ☒ 1. At the centre of curvature
 - ☒ 2. At the focus
 - ☒ 3. Between the centre of curvature and the focus point
 - ☒ 4. At infinity

Q.4 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 75 :: 29 : Y

- Ans**
- ☒ 1. X = 21, Y = 89
 - ☒ 2. X = 28, Y = 74
 - ☒ 3. X = 26, Y = 76
 - ☒ 4. X = 23, Y = 81

- Q.5** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?
YTL, QLD, IDV, AVN, ?
- Ans** ☐ 1. SMG
☐ 2. SNG
☒ 3. SNF
☐ 4. SMF
- Q.6** A change of state directly from gas to solid without changing into liquid state is called:
- Ans** ☐ 1. solidification
☐ 2. vaporisation
☒ 3. deposition
☐ 4. fusion
- Q.7** If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 40 men and 20 boys in doing the same type of work will be:
- Ans** ☐ 1. 5 days
☐ 2. 3 days
☐ 3. 4 days
☒ 4. 2 days
- Q.8** Select the INCORRECT pair.
- Ans** ☐ 1. Plastic glass – non-biodegradable
☐ 2. Paper cup – biodegradable
☐ 3. Vegetable – biodegradable
☒ 4. Kulhad – non-biodegradable
- Q.9** Use of regenerative cells in the process of budding is present in:
- Ans** ☐ 1. Amoeba
☐ 2. Planaria
☒ 3. Hydra
☐ 4. Spirogyra
- Q.10** The founder and chairman of which of the following companies topped the EdelGive-Hurun India Philanthropy List 2024?
- Ans** ☐ 1. WIPRO
☐ 2. Reliance Industries
☐ 3. TCS
☒ 4. HCL Technologies
- Q.11** Krishi Sakhi Convergence Programme (KSCP), under the Lakhpati Didi programme, was launched from which of the following places in June 2024 by Prime Minister Narendra Modi?
- Ans** ☐ 1. Ahmedabad
☐ 2. Nagpur
☒ 3. Varanasi
☐ 4. Lucknow

Q.12 JGOK is related to HEMI in a certain way based on the English alphabetical order. In the same way, TQYU is related to ROWS. To which of the following options is NKSO related, following the same logic?

- Ans**
- ☐ 1. ILQM
 - ☐ 2. ILMQ
 - ☒ 3. LIQM
 - ☐ 4. LIMQ

Q.13 A train of 24 carriages, each of 60 m length, while an engine also of 60 m length is running at a speed of 50 km/h. In how much time will the train cross a bridge 1.5 km long?

- Ans**
- ☒ 1. 3.6 min
 - ☐ 2. 4.4 min
 - ☐ 3. 4 min
 - ☐ 4. 3 min

Q.14 The work done by a constant force acting on a body is _____.

- Ans**
- ☐ 1. always negative
 - ☐ 2. always zero
 - ☐ 3. always positive
 - ☒ 4. either positive or negative

Q.15 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$85 A 17 C 82 D 11 B 2 = ?$$

- Ans**
- ☐ 1. 67
 - ☐ 2. 66
 - ☐ 3. 68
 - ☒ 4. 65

Q.16 Town I is to the east of Town X. Town L is to the west of Town X. Town N is to the north of Town L. Town P is to the north-east of Town L. Town P is to the east of Town N. Town I is to the south-west of Town P. What is the position of Town P with respect to Town X?

- Ans**
- ☒ 1. North-east
 - ☐ 2. East
 - ☐ 3. West
 - ☐ 4. South-west

Q.17 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 8 7 7 8 5 2 7 1 4 3 2 4 7 7 6 4 5 3 1 2 6 7 9 7 9 8 0 1 3 3 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 3
 - ☐ 2. 2
 - ☐ 3. 4
 - ☒ 4. 1

Q.18 A girl pushes a trolley with a constant force F through a distance s , the work done will be:

- Ans**
- ☐ 1. $F - s$
 - ☒ 2. $F \times s$
 - ☐ 3. F/s
 - ☐ 4. $F + s$

Q.19 Which of the following statements is correct about the ozone?

- Ans**
- ☐ 1. It is formed by combining only two atoms of oxygen.
 - ☐ 2. It causes blood cancer.
 - ☒ 3. Decrease in the amount of ozone in the atmosphere is due to chlorofluorocarbons (CFC).
 - ☐ 4. It is not poisonous.

Q.20 Which of the following compounds is used in a soda-acid fire extinguisher?

- Ans**
- ☐ 1. Ca(OH)_2
 - ☐ 2. Na_2CO_3
 - ☐ 3. H_2CO_3
 - ☒ 4. NaHCO_3

Q.21 A ball of mass 0.5 kg is moving with a uniform velocity of 6 m/s. The kinetic energy of the ball is:

- Ans**
- ☐ 1. 15 J
 - ☐ 2. 12 J
 - ☐ 3. 6 J
 - ☒ 4. 9 J

Q.22 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

78, 124, 152, 198, 226, 272, ?

- Ans**
- ☐ 1. 294
 - ☐ 2. 320
 - ☒ 3. 300
 - ☐ 4. 286

Q.23 Which one of the following plant parts is NOT used for vegetative propagation?

- Ans**
- ☐ 1. Leaves
 - ☒ 2. Seed
 - ☐ 3. Stem
 - ☐ 4. Root

Q.24 Which of the following processes involves the transfer of a source of energy (food) from outside the body of an organism to inside?

- Ans**
- ☐ 1. Translocation
 - ☒ 2. Nutrition
 - ☐ 3. Transportation
 - ☐ 4. Metabolism

Q.25 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All bulbs are lights.

Some lights are fans.

Conclusions:

(I) Some fans are bulbs.

(II) All bulbs are fans.

- Ans**
- ☐ 1. Only conclusion (II) follows
 - ☐ 2. Only conclusion (I) follows
 - ☐ 3. Both conclusions (I) and (II) follow
 - ☒ 4. Neither conclusion (I) nor (II) follows

Q.26 Evaluate the given expression.

$$(24 \div 3) \times 2$$

- Ans**
- ☐ 1. 4
 - ☒ 2. 16
 - ☐ 3. 12
 - ☐ 4. 18

Q.27 A worker lifts a rice bag of 10 kg from the ground and puts it on the truck 2 m above the ground. Calculate the work done by him on the rice bag. (Given, $g = 10 \text{ m s}^{-2}$)

- Ans**
- ☐ 1. 59 J
 - ☐ 2. 153 J
 - ☐ 3. 100 J
 - ☒ 4. 200 J

Q.28 If each vowel in the word MAJORITY is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order, then how many letters are common between the original word and the group of letters thus formed?

- Ans**
- ☐ 1. 1
 - ☐ 2. 3
 - ☐ 3. 4
 - ☒ 4. 2

Q.29 Which of the following statements regarding saturated and unsaturated carbon compounds is correct?

Statement I: Saturated carbon compounds are hydrocarbons where carbon atoms are connected by single covalent bonds.

Statement II: Unsaturated carbon compounds are hydrocarbons where carbon atoms are connected by single covalent bonds.

- Ans**
- ☐ 1. Only statement II is correct.
 - ☐ 2. Both statements I and II are correct.
 - ☒ 3. Only statement I is correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.30 Which organ of the human body pumps blood?

- Ans**
- ☐ 1. Pancreas
 - ☐ 2. Stomach
 - ☒ 3. Heart
 - ☐ 4. Liver

Q.31 The population of a town is 1,76,400. If it increases at the rate of 5% per annum, then what will be its population 2 years hence?

- Ans**
- ☐ 1. 1,94,621
 - ☐ 2. 1,94,572
 - ☐ 3. 1,93,636
 - ☒ 4. 1,94,481

Q.32 Which of the following reactions is NOT an exothermic reaction?

- Ans**
- ☒ 1. Photosynthesis
 - ☐ 2. Respiration
 - ☐ 3. Dilution of a strong acid
 - ☐ 4. Burning of natural gas

Q.33 A combination of two lenses of power +2.0 D and -0.25 D is equivalent to a single lens of power:

- Ans**
- ☒ 1. +1.75 D
 - ☐ 2. -3.5 D
 - ☐ 3. +2.25 D
 - ☐ 4. +1.25 D

Q.34 Which of the following equations is true, when two objects A and B of masses M and m are separated by a distance d, F is the force of attraction between them and G is the universal gravitational constant?

- Ans**
- ☐ 1. $F = G \frac{1}{d^2}$
 - ☒ 2. $F = G \frac{M \times m}{d^2}$
 - ☐ 3. $F = G \frac{M \times m}{d}$
 - ☐ 4. $F = G \frac{M}{d^2}$

Q.35 The weight of an object on the Moon is _____

- Ans**
- ☒ 1. less than the weight on the earth
 - ☐ 2. equal to the weight on the earth
 - ☐ 3. may be greater than or less than depending on the density of the object
 - ☐ 4. greater than the weight on the earth

Q.36 The areas of three adjacent faces of a solid cuboid are 66 cm^2 , 192 cm^2 and 198 cm^2 . What is the volume (in cm^3) of the cuboid?

- Ans**
- ☐ 1. 1782
 - ☒ 2. 1584
 - ☐ 3. 1792
 - ☐ 4. 1594

Q.37 By selling 8 oranges for ₹40, a man loses 20%. How many should he sell for ₹30 to gain 20% in the transaction?

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 2
 - ☐ 4. 5

Q.38 What is the SI unit of momentum?

- Ans**
- ☐ 1. kg m s
 - ☐ 2. $\text{kg m}^{-1} \text{s}^{-1}$
 - ☒ 3. kg m s^{-1}
 - ☐ 4. kg m

Q.39 On November 9, 2024, which city recorded the highest Air Quality Index (AQI) among Punjab, Haryana, and Chandigarh?

- Ans**
- ☐ 1. Sonipat
 - ☒ 2. Chandigarh
 - ☐ 3. Mandi Gobindgarh
 - ☐ 4. Bahadurgarh

Q.40 Which of the following metals reacts with very dilute nitric acid to evolve hydrogen gas?

- Ans**
- ☒ 1. Mn
 - ☐ 2. Zn
 - ☐ 3. Fe
 - ☐ 4. Al

Q.41 Which of the following is produced when zinc oxide reacts with carbon?

- Ans**
- ☐ 1. Zn and CO_2
 - ☐ 2. Only Zn
 - ☒ 3. Both Zn and CO
 - ☐ 4. Only CO

Q.42 Which of the following is INCORRECTLY matched related to the excretory system of humans?

- Ans**
- ☐ 1. Ureter - a pair
 - ☐ 2. Urinary bladder - unpaired
 - ☐ 3. Kidney - a pair
 - ☒ 4. Urethra - a pair

Q.43 Select the correct option related to the function of auxin in plants.

- Ans**
- ☐ 1. Induce flowering
 - ☐ 2. Make plants insect resistant
 - ☐ 3. Increases stem width
 - ☒ 4. Helps the cells to grow longer

Q.44 Which of the following is/are NOT a parasitic organism?

- Ans**
- ☐ 1. Ticks
 - ☐ 2. Cuscuta
 - ☐ 3. Lice
 - ☒ 4. Amoeba

Q.45 Select the term which is not an identity.

- Ans**
- ☒ 1. $(a + b)^2 = a^2 + b^2$
 - ☐ 2. $(a - b)^2 = a^2 + b^2 - 2ab$
 - ☐ 3. $(a + 1)(a + 2) = a^2 + 3a + 2$
 - ☐ 4. $(a + b)^2 = a^2 + b^2 + 2ab$

Q.46 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. AW – VP
 - ☐ 2. BX – WQ
 - ☒ 3. KO – WA
 - ☐ 4. TP – OI

Q.47 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) & 3 Ω 9 # 2 & % 4 6 @ 8 S 7 1 * £ 5 (Right)

If all the symbols are dropped from the series, which of the following will be seventh from the right?

- Ans**
- ☐ 1. 7
 - ☐ 2. 
 - ☒ 3. 2
 - ☐ 4. 9

Q.48 The surface area of a sphere is same as the curved surface area of a right circular cylinder whose height and diameter are 12 cm each. The radius of the sphere is.

- Ans**
- ☐ 1. 4 cm
 - ☐ 2. 12 cm
 - ☒ 3. 6 cm
 - ☐ 4. 8 cm

Q.49 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will be come in place of the question mark '?' in the following equation?

(14 B 4) A 2 C (15 A 5) B 9 D 34 C (48 A 6) B 2 = ?

- Ans**
- ☒ 1. 37
 - ☐ 2. 45
 - ☐ 3. 22
 - ☐ 4. 17

Q.50 In an election between two candidates, one got 55% of the total valid votes, and 20% of the votes were invalid. If the total number of votes was 7500, the number of valid votes that the other candidate got was:

- Ans**
- ☐ 1. 3000
 - ☒ 2. 2700
 - ☐ 3. 3300
 - ☐ 4. 2600

Q.51 The mode of the observations 20, 23, 25, 30, 20, 31, 32, 35, 20, 41, 42, 43, 20 and 20 is:

Ans ✓ 1. 20

✗ 2. 35

✗ 3. 40

✗ 4. 30

Q.52 Who, along with Parthiv Dhar, won the Best Book on Cinema award for 'Kishore Kumar: The Ultimate Biography', as announced by the Ministry of Information & Broadcasting in October 2024?

Ans ✗ 1. Sutapa Chakraborty

✓ 2. Anirudha Bhattacharjee

✗ 3. Heena Choudhary

✗ 4. Nayanjyoti Sarma

Q.53 If $3 : 6 :: 6 : a$, what is the value of a ?

Ans ✗ 1. 36

✗ 2. 16

✓ 3. 12

✗ 4. 18

Q.54 A shopkeeper allows a 4% discount on his marked price. If the cost price of an article is ₹120 and he has to make a profit of 10%, then his marked price must be:

Ans ✗ 1. ₹117.50

✗ 2. ₹127.50

✗ 3. ₹120.50

✓ 4. ₹137.50

Q.55 What is the colour of the flame when magnesium burns in air?

Ans ✗ 1. Red

✗ 2. Green

✓ 3. White

✗ 4. Pink

Q.56 Prime Minister Narendra Modi inaugurated PARAM Rudra Supercomputer at which of the following places in September 2024?

Ans ✓ 1. Kolkata

✗ 2. Hyderabad

✗ 3. Chennai

✗ 4. Bengaluru

Q.57 Which of the following is/are NOT present in the plasma?

Ans ✗ 1. Proteins

✗ 2. Hormones

✓ 3. Undigested food

✗ 4. Salts

Q.58 Which animal was declared the official mascot of 2024 Khelo India Winter Games?

- Ans**
- ☐ 1. Snow bear
 - ☐ 2. Yak
 - ☐ 3. Sheep
 - ☒ 4. Snow leopard

Q.59 In a certain code language,

$P + Q$ means 'P is the father of Q',

$P - Q$ means 'P is the son of Q',

$P \times Q$ means 'P is the wife of Q' and

$P \div Q$ means 'P is the brother of Q'.

Based on the above, how is K related to R if ' $M \div N \times O + K \times L - R$ '?

- Ans**
- ☐ 1. Daughter
 - ☐ 2. Mother
 - ☒ 3. Son's wife
 - ☐ 4. Son

Q.60 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some slippers are shoes.

Some shoes are belts.

Conclusions:

(I) Some belts are slippers.

(II) No belt is a slipper.

- Ans**
- ☐ 1. Only conclusion (I) follows
 - ☐ 2. Both conclusions (I) and (II) follow
 - ☒ 3. Neither conclusion (I) nor (II) follows
 - ☐ 4. Only conclusion (II) follows

Q.61 One year ago, the ratio of the ages of Sara and Dipti was 3 : 4, respectively. Four years hence, this ratio would become 4 : 5. The present age of Sara is:

- Ans**
- ☒ 1. 16 years
 - ☐ 2. 19 years
 - ☐ 3. 15 years
 - ☐ 4. 12 years

Q.62 Vacuoles are present mainly of large size in _____.

- Ans**
- ☐ 1. bacteria
 - ☐ 2. both plant cells and animal cells
 - ☒ 3. plant cells
 - ☐ 4. animal cells

Q.63 If $\tan \theta + \cot \theta = 13$, then find the value of $8 \tan^2 \theta + 8 \cot^2 \theta$.

- Ans**
- ☐ 1. 1372
 - ☐ 2. 169
 - ☒ 3. 1336
 - ☐ 4. 167

Q.64 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 163 :: 74 : Y

- Ans**
- ☐ 1. X = 86, Y = 129
 - ☐ 2. X = 79, Y = 145
 - ☐ 3. X = 93, Y = 156
 - ☒ 4. X = 81, Y = 149

Q.65 Which tissue is responsible for the movement in our body?

- Ans**
- ☐ 1. Epithelial tissue
 - ☐ 2. Cartilage
 - ☐ 3. Areolar tissue
 - ☒ 4. Muscular tissue

Q.66 Which of the following statements is/are correct regarding the atomic number of an element?

Statement I: The atomic number of an element represents the number of protons present in the nucleus of an atom.

Statement II: The atomic number of an element represents the number of neutrons present in the nucleus of an atom.

- Ans**
- ☒ 1. Only statement I is correct.
 - ☐ 2. Both statements I and II are correct.
 - ☐ 3. Only statement II is correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.67 Accumulation of which substance in our muscles during sudden activity causes cramps?

- Ans**
- ☐ 1. Glucose
 - ☐ 2. Sucrose
 - ☐ 3. Pyruvic acid
 - ☒ 4. Lactic acid

Q.68 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - The movement of a person or people from one country, locality, place of residence to settle in another country, locality, place of residence is known as migration.

Reasons:

I. Some person or people migrate in search of work or economic opportunities, to join family, or to study. Others migrate to escape conflict, persecution, terrorism, or human rights violations.

II. Some person or people migrate in response to the adverse effects of climate change, natural disasters, or other environmental factors.

Ans ✓ 1. Both I and II are possible reasons.

✗ 2. Neither I nor II is a possible reason.

✗ 3. Only I is a possible reason.

✗ 4. Only II is a possible reason.

Q.69 Which of the following is a connective tissue?

Ans ✗ 1. Columnar epithelium

✓ 2. Blood

✗ 3. Cuboidal epithelium

✗ 4. Muscle

Q.70 What sum will earn a simple interest of ₹960 in 3 years at 16% per year rate of interest?

Ans ✗ 1. ₹2,200

✗ 2. ₹1,800

✓ 3. ₹2,000

✗ 4. ₹1,600

Q.71 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some books are trees.

All trees are mats.

All mats are ponds.

Conclusions:

(I) Some ponds are books.

(II) Some mats are books.

Ans ✓ 1. Both conclusions (I) and (II) follow.

✗ 2. Only conclusion (II) follows.

✗ 3. Only conclusion (I) follows.

✗ 4. 

Q.72 Which of the following metals does NOT react with cold water?

Ans ✗ 1. Calcium

✗ 2. Potassium

✗ 3. Sodium

✓ 4. Magnesium

Q.73 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit to the left of B. Only three people sit between B and R. P sits second to the right of B. Only two people sit between P and A. F sits at some place to the right of E but at some place to the left of Q. How many people sit to the right of F?

- Ans**
- ☐ 1. One
 - ☒ 2. Three
 - ☐ 3. Four
 - ☐ 4. Two

Q.74 In a certain code language, 'ROSE' is coded as '4618' and 'SEAR' is coded as '6438'. What is the code for 'O' in the given code language?

- Ans**
- ☐ 1. 8
 - ☐ 2. 4
 - ☐ 3. 6
 - ☒ 4. 1

Q.75 The atomic mass of carbon-12 isotope is:

- Ans**
- ☐ 1. 6 u
 - ☐ 2. 14 u
 - ☒ 3. 12 u
 - ☐ 4. 16 u

Q.76 The inverse ratio of 1 : 2 : 3 is:

- Ans**
- ☐ 1. 2 : 1 : 3
 - ☐ 2. 3 : 2 : 1
 - ☒ 3. 6 : 3 : 2
 - ☐ 4. 2 : 3 : 6

Q.77 In a row of 45 students, facing north, Kevin is 16th from the right end. If Luther is 10th to the left of Kevin, what is Luther's position from the left end of the row?

- Ans**
- ☒ 1. 20th
 - ☐ 2. 22nd
 - ☐ 3. 21st
 - ☐ 4. 23rd

Q.78 The kind of energy possessed by a moving body by virtue of its motion is _____.

- Ans**
- ☐ 1. nuclear energy
 - ☐ 2. electromagnetic energy
 - ☒ 3. kinetic energy
 - ☐ 4. potential energy

Q.79 A cube-shaped metal box of 1 kg mass is kept on the horizontal surface of a table. Assuming acceleration due to gravity is 10 m/sec², the thrust acting on the table surface is _____.

- Ans**
- ☒ 1. 10 N
 - ☐ 2. 1000 N
 - ☐ 3. 1 N
 - ☐ 4. 100 N

Q.80 Which of the following forts, India's nomination for the UNESCO World Heritage List for 2024-25, was the site of the coronation of Shivaji Maharaj?

- Ans**
- ☐ 1. Mangi-Tungi Fort
 - ☐ 2. Korigad Fort
 - ☒ 3. Raigad Fort
 - ☐ 4. Karnala Fort

Q.81 Which team won the gold medal at 2024 Badminton Asia Team Championships in February 2024?

- Ans**
- ☐ 1. Thailand
 - ☒ 2. India
 - ☐ 3. Japan
 - ☐ 4. Malaysia

Q.82 If $x = 3^2 \times 2^3$, then $x^4 = ?$

- Ans**
- ☐ 1. $3^6 \times 2^3$
 - ☐ 2. $3^8 \times 2^3$
 - ☒ 3. $3^8 \times 2^{12}$
 - ☐ 4. $3^6 \times 2^7$

Q.83 Who took over as the new Director General (Acquisition) in the Defence Ministry in January 2024?

- Ans**
- ☐ 1. Arun Kumar Sinha
 - ☐ 2. Ramesh Chandra
 - ☐ 3. Rajeev Kumar
 - ☒ 4. Samir Kumar Sinha

Q.84 Which of the following is treated with dry slaked lime $[\text{Ca}(\text{OH})_2]$ to make bleaching powder?

- Ans**
- ☐ 1. Carbon dioxide gas
 - ☐ 2. Hydrogen gas
 - ☒ 3. Chlorine gas
 - ☐ 4. Water

Q.85 A series of compounds in which the same functional group substitutes for hydrogen in a carbon chain is called _____.

- Ans**
- ☐ 1. isomers
 - ☐ 2. isobars
 - ☒ 3. homologous series
 - ☐ 4. isochores

Q.86 Find the compound interest on ₹13,000 in 2 years at 4% p.a., interest compounded yearly.

- Ans**
- ☐ 1. ₹1,086.60
 - ☒ 2. ₹1,060.80
 - ☐ 3. ₹997.60
 - ☐ 4. ₹996.50

Q.87 The value of $0.0488 \div 0.002 = ?$

- Ans**
- ☐ 1. 21.5
 - ☒ 2. 24.4
 - ☐ 3. 18.7
 - ☐ 4. 13.8

Q.88 What digit must be assigned to k so that the 7-digit number 451k603 is exactly divisible by 9?

- Ans**
- ☐ 1. 2
 - ☐ 2. 7
 - ☐ 3. 5
 - ☒ 4. 8

Q.89 In a certain code language, 'PILED' is coded as '65428' and 'PEDAL' is coded as '57628'. What is the code for 'I' in the given code language?

- Ans**
- ☐ 1. 8
 - ☒ 2. 4
 - ☐ 3. 2
 - ☐ 4. 6

Q.90 In the rear-view mirror of cars, people use which of the following?

- Ans**
- ☐ 1. Plano-convex lens
 - ☐ 2. Concave mirror
 - ☐ 3. Biconvex lens
 - ☒ 4. Convex mirror

Q.91 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

SALT - ALST - TLAS

HOLE - OLHE - ELOH

- Ans**
- ☐ 1. ROAM - ORAM - MOAR
 - ☐ 2. GREW - GERW - WERG
 - ☒ 3. VIBE - IBVE - EBIV
 - ☐ 4. FING - INFG - INGF

Q.92 Which products are formed in the chlor-alkali process when electricity is passed through an aqueous sodium chloride solution?

$\text{NaCl(aq)} + \text{H}_2\text{O(l)} \rightarrow \text{Products}$

- Ans**
- ☐ 1. $\text{NaHCO}_3 + \text{Cl}_2$
 - ☐ 2. $\text{NaCl} + \text{H}_2$
 - ☐ 3. $\text{H}_2 + \text{O}_2$
 - ☒ 4. $\text{NaOH} + \text{H}_2 + \text{Cl}_2$

Q.93 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only two people sit between M and N when counted from the right of M. Only two people sit between N and E when counted from the right of N. Only three people sit between M and F when counted from the right of M. D sits to the immediate left of G. Who sits third to the left of L?

- Ans**
- ☐ 1. D
 - ☐ 2. M
 - ☐ 3. N
 - ☒ 4. G

Q.94 In $\triangle PQR$, $\angle Q = \angle R$ and $QR = 12$ cm, $PR = 10$ cm and PS be the altitude, then the length of PS is:

- Ans**
- ☐ 1. 11 cm
 - ☐ 2. 3 cm
 - ☒ 3. 8 cm
 - ☐ 4. 10 cm

Q.95 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

RMK, UOL, XQM, ASN, ?

- Ans**
- ☐ 1. DQO
 - ☐ 2. EUO
 - ☒ 3. DUO
 - ☐ 4. DUP

Q.96 The value of $\left(-\frac{5}{3}\right) \times \left(\frac{9}{25}\right) + \left(\frac{1}{5} - 3\right) = ?$

- Ans**
- ☐ 1. $-\frac{4}{5}$
 - ☒ 2. $-\frac{17}{5}$
 - ☐ 3. 0
 - ☐ 4. $\frac{9}{5}$

Q.97 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. IM-JL
 - ☐ 2. FJ-GI
 - ☒ 3. LP-MQ
 - ☐ 4. QU-RT

Q.98 Which statement is NOT true for magnetic field lines?

- Ans**
- ☐ 1. Inside the magnet, the direction of field lines is from its south pole to its north pole.
 - ☐ 2. The relative strength of the magnetic field is shown by the degree of closeness of the field lines.
 - ☒ 3. Magnetic field lines are not closed curves.
 - ☐ 4. No two field lines are found to cross each other.

Q.99 The Finance Minister launched Nari Shakti branches of which bank to empower women entrepreneurs in November 2024?

- Ans**
- ☐ 1. SBI
 - ☒ 2. Union Bank
 - ☐ 3. PNB
 - ☐ 4. HDFC Bank

Q.100 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 21-times of the same work in _____(days).

- Ans**
- ☐ 1. 85
 - ☐ 2. 4
 - ☒ 3. 84
 - ☐ 4. 5

2024/12/28-17:45:46



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Vidya Institute of Information Technology
Test Date	28/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following does NOT correctly match a change in the state of matter with its corresponding process?

Ans ☒ 1. Gas to Liquid: Sublimation

☐ 2. Solid to Gas: Sublimation

☐ 3. Liquid to Gas: Evaporation

☐ 4. Gas to Solid: Deposition

Q.2 The sum of three sides of an isosceles triangle is 20 cm, and the ratio of an equal side to the base is 3 : 4, The altitude of the triangle is:

Ans ☐ 1. $3\sqrt{5}$ cm

☐ 2. $3\sqrt{3}$ cm

☒ 3. $2\sqrt{5}$ cm

☐ 4. $4\sqrt{5}$ cm

Q.3 Which of the following are bacterial infections that occur due to sexual contact?

A. Gonorrhoea

B. AIDS

C. Syphilis

Ans ☐ 1. Both B and C

☐ 2. Both A and B

☒ 3. Both A and C

☐ 4. A, B and C

Q.4 Which of the following statements is INCORRECT for colloid?

- Ans
- ☐ 1. Colloid is a heterogeneous mixture.
 - ☒ 2. Colloid is a homogeneous mixture.
 - ☐ 3. They do not settle down when left undisturbed.
 - ☐ 4. Colloidal particles scatter a beam of light passing through it.

Q.5 The laws of reflection are applicable to:

- Ans
- ☐ 1. all types of reflecting surfaces excluding spherical surfaces
 - ☐ 2. only plane reflecting surface
 - ☒ 3. all types of reflecting surfaces including spherical surfaces
 - ☐ 4. only curved reflecting surface

Q.6 A blanket is sold for ₹1,148, which results in a loss of 30%. For how much should it be sold to gain 5%?

- Ans
- ☒ 1. ₹1,722
 - ☐ 2. ₹1,734
 - ☐ 3. ₹1,423
 - ☐ 4. ₹1,543

Q.7 In which plant do the buds produced in the notches along the leaf margin, fall on the soil and develop into a new plant?

- Ans
- ☒ 1. Bryophyllum
 - ☐ 2. Rose
 - ☐ 3. Grapes
 - ☐ 4. Jasmine

Q.8 What causes the wavy appearance of objects seen through a turbulent stream of hot air?

- Ans
- ☐ 1. Interference of light
 - ☐ 2. Absorption of light
 - ☐ 3. Diffraction of light
 - ☒ 4. Refraction of light

Q.9 In a certain code language, 'He Loves Cricket' is written as 'Ki Mi Gi', 'She Loves To Play' is written as 'Si Di Ci Ki', and 'He Play Chess' is written as 'Ti Gi Di'. How is 'Chess' written in the given language?

- Ans
- ☐ 1. Ki
 - ☐ 2. Di
 - ☒ 3. Ti
 - ☐ 4. Gi

Q.10 Select the parasitic plant from the given options.

- Ans
- ☒ 1. Cuscuta
 - ☐ 2. Cabbage
 - ☐ 3. Cucumber
 - ☐ 4. Cactus

Q.11 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 @ 2 % 9 + 7 £ * 5 6 # Ω \$ 1 & 8 4 (Right)

How many such symbols are there, each of which is immediately preceded by a symbol and also immediately followed by another symbol?

- Ans**
- ☐ 1. 2
 - ☒ 2. 1
 - ☐ 3. 0
 - ☐ 4. 3

Q.12 B, C, D, E, F, G and K are sitting around a circular table, facing the centre. Only two people sit between E and F when counted from the left of F. G sits third to the left of K. C sits to the immediate right of K. C sits second to the left of E. B is not an immediate neighbour of G.

Who sits third to the right of B?

- Ans**
- ☐ 1. F
 - ☒ 2. D
 - ☐ 3. K
 - ☐ 4. G

Q.13 Which of the following statements is true about suspension?

- Ans**
- ☐ 1. The solute particles don't settle down when a suspension is left undisturbed.
 - ☐ 2. The solute particles cannot be separated from the mixture.
 - ☐ 3. It is a homogeneous mixture.
 - ☒ 4. The particles of a suspension can be seen by the naked eye.

Q.14 Hindustan Aeronautics Limited (HAL) has been upgraded to which status by the Ministry of Finance in 2024?

- Ans**
- ☐ 1. Navratna CPSE
 - ☐ 2. Mini Ratna CPSE
 - ☒ 3. Maharatna CPSE
 - ☐ 4. Saksham CPSE

Q.15 The National Pension System Vatsalya (NPS Vatsalya) was launched on ____.

- Ans**
- ☒ 1. 18 September 2024
 - ☐ 2. 8 September 2024
 - ☐ 3. 26 September 2024
 - ☐ 4. 28 September 2024

Q.16 Six boxes P, Q, R, S, T and U are kept one over the other but not necessarily in the same order. P is kept third from the bottom. Only two boxes are kept between P and Q. Only three boxes are kept between Q and R. S is kept immediately below R. T is kept immediately below Q.

Q. How many boxes are kept between U and S?

- Ans**
- ☐ 1. Three
 - ☐ 2. Zero
 - ☐ 3. One
 - ☒ 4. Two

Q.17 In a test, B got 60 marks while A got 75 marks. What percentage of A's marks was B's marks?

- Ans**
- ☐ 1. 75%
 - ☐ 2. 60%
 - ☐ 3. 65%
 - ☒ 4. 80%

Q.18 Which of the following seeds are dispersed by animals, especially spiny seeds with hooks, that get attached to their bodies and are carried to distant places?

- Ans**
- ☒ 1. Xanthium and Urena
 - ☐ 2. Sunflower and Madar
 - ☐ 3. Drumstick and Maple
 - ☐ 4. Castor and Balsam

Q.19 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. BVP
 - ☒ 2. PKI
 - ☐ 3. UOI
 - ☐ 4. KEY

Q.20 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HJG, KMI, NPM, QSP, ?

- Ans**
- ☐ 1. VST
 - ☐ 2. TSV
 - ☐ 3. VTS
 - ☒ 4. TVS

Q.21 In a parallel combination of two different resistors, which of the following is/are correct?

(A) The potential difference across each resistor has the same value.

(B) The current flowing through each resistor has the same value.

- Ans**
- ☐ 1. Both 'A' and 'B' are correct.
 - ☐ 2. 'A' is incorrect and 'B' is correct.
 - ☐ 3. Both 'A' and 'B' are incorrect.
 - ☒ 4. 'A' is correct and 'B' is incorrect.

Q.22 Evaluate the given expression.

$$\left(\frac{-2}{5}\right)^{-2} \times \left(\frac{-4}{5}\right)^4$$

Ans

☐ 1. $\frac{25}{26}$

☐ 2. $\frac{26}{25}$

☐ 3. $\frac{25}{64}$

☒ 4. $\frac{64}{25}$

Q.23 The phenomenon of change of liquid into vapours at any temperature below its boiling point is known as _____.

Ans

☐ 1. sublimation

☐ 2. deposition

☐ 3. fusion

☒ 4. evaporation

Q.24 _____ an initiative by the Ministry of Culture, Government of India, being executed by Lalit Kala Akademi and National Gallery of Modern Art, in July 2024.

Ans

☐ 1. Project PIAR

☐ 2. Project PRAI

☐ 3. Project APRI

☒ 4. Project PARI

Q.25 Whenever an object falls toward the earth, acceleration is involved. Which of the following forces provides this acceleration?

Ans

☒ 1. Earth's gravitational force

☐ 2. Electromagnetic force

☐ 3. Nuclear force

☐ 4. Earth's repulsive force

Q.26 How many prime numbers lie between 1 and 30?

Ans

☒ 1. 10

☐ 2. 11

☐ 3. 8

☐ 4. 9

Q.27 Which of the following organisms has NO genetically predetermined sex?

Ans

☐ 1. Human

☐ 2. Dogs

☒ 3. Snail

☐ 4. Pigeon

Q.28 Pipes A and B can fill a tank in 7 hours and 10 hours, respectively, and pipe C can empty the full tank in 14 hours. All three pipes are opened together, but pipe A is closed after 4.5 hours. In how many hours will the remaining part of tank be filled?

- Ans**
- ☐ 1. 12
 - ☐ 2. 16
 - ☐ 3. 24
 - ☒ 4. 8

Q.29 If 6 men and 8 boys can do a piece of work in 10 days, while 26 men and 48 boys can do the same in 2 days, the time taken by 25 boys in doing the same type of work will be:

- Ans**
- ☐ 1. 6 days
 - ☒ 2. 8 days
 - ☐ 3. 4 days
 - ☐ 4. 5 days

Q.30 The median of the observations 4, 14, 11, 9, 7, 8, 9, 12, 4 and 6 is:

- Ans**
- ☒ 1. 8.5
 - ☐ 2. 8
 - ☐ 3. 9.5
 - ☐ 4. 9

Q.31 Which of the following is an example of a heterogeneous solution?

- Ans**
- ☒ 1. Mixture of oil in water
 - ☐ 2. Mixture of ethanol in water
 - ☐ 3. Lemonade
 - ☐ 4. Tincture of iodine

Q.32 Which of the following are cells of phloem?

- Ans**
- ☐ 1. Tracheids and vessels
 - ☒ 2. Sieve tubes and companion cells
 - ☐ 3. Tracheids and companion cells
 - ☐ 4. Sieve cells and vessels

Q.33 Every cell has a _____ around it to keep its own contents separate from the external environment.

- Ans**
- ☐ 1. nucleus
 - ☐ 2. cell wall
 - ☐ 3. mitochondria
 - ☒ 4. membrane

Q.34 How many eggs is/are produced every month by one of the ovaries?

- Ans**
- ☒ 1. One
 - ☐ 2. Three
 - ☐ 3. Two
 - ☐ 4. Four

Q.35 By what per cent does the curved surface area of a cylinder decrease, if the radius is increased by 20% and the height is decreased by 30%?

- Ans**
- ☐ 1. 14%
 - ☒ 2. 16%
 - ☐ 3. 20%
 - ☐ 4. 23%

Q.36 The average of the first 10 odd prime numbers is:

- Ans**
- ☐ 1. 13.8
 - ☐ 2. 17
 - ☐ 3. 12.9
 - ☒ 4. 15.8

Q.37 In a certain code language, 'I Drink Juice' is written as 'Hu Pu Nu' and 'We Drink Water' is written as 'Tu Su Hu' and 'Juice and Water' is written as 'Pu Du Tu'. How is 'We' written in the given language?

- Ans**
- ☐ 1. Hu
 - ☐ 2. Pu
 - ☒ 3. Su
 - ☐ 4. Tu

Q.38 The smallest six-digit natural number that is exactly divisible by 8, 10, 12 and 16 is:

- Ans**
- ☐ 1. 100020
 - ☒ 2. 100080
 - ☐ 3. 100040
 - ☐ 4. 100060

Q.39 Which unicellular organism has a whip-like structure at one end of the cell and binary fission occurs in a definite orientation in relation to these structures?

- Ans**
- ☒ 1. Leishmania
 - ☐ 2. Amoeba
 - ☐ 3. Plasmodium
 - ☐ 4. Yeast

Q.40 The sale bill of an article after two successive discounts of 20% each is ₹16,000. The MRP of the article is:

- Ans**
- ☐ 1. ₹24,000
 - ☐ 2. ₹24,560
 - ☐ 3. ₹25,220
 - ☒ 4. ₹25,000

Q.41 If the length of a rectangle is thrice its breadth and the perimeter of that rectangle is 48 cm, then find its area (in cm^2).

- Ans**
- ☐ 1. 84
 - ☒ 2. 108
 - ☐ 3. 112
 - ☐ 4. 96

Q.42 Which of the following phenomena is responsible for Tyndall effect?

- Ans**
- ☐ 1. Refraction of light
 - ☐ 2. Dispersion of light
 - ☐ 3. Reflection of light
 - ☒ 4. Scattering of light

Q.43 Kartik starts from Point A and drives 42 km towards South. He then takes a left turn, drives 25 km, turns left and drives 12 km. He then takes a left turn and drives 20 km. He takes a final right turn, drives 30 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 5 km towards North
 - ☐ 2. 5 km towards South
 - ☐ 3. 5 km towards East
 - ☒ 4. 5 km towards West

Q.44 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

912, 865, 826, 779, 740, ?

- Ans**
- ☐ 1. 675
 - ☒ 2. 693
 - ☐ 3. 689
 - ☐ 4. 650

Q.45 Find the simple interest on ₹700 at 7% per month in 9 months.

- Ans**
- ☐ 1. ₹461
 - ☐ 2. ₹474
 - ☐ 3. ₹434
 - ☒ 4. ₹441

Q.46 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All buds are flowers.

All insects are flowers.

Conclusions:

(I) All buds are insects.

(II) All flowers are buds.

- Ans**
- ☐ 1. Only conclusion (II) follows
 - ☐ 2. Both conclusions (I) and (II) follow
 - ☐ 3. Only conclusion (I) follows
 - ☒ 4. Neither conclusion (I) nor (II) follows

Q.47 In a right-angled triangle, if the hypotenuse is 10 units and one of its sides is 8 units then find the area of the triangle.

- Ans**
- ✓ 1. 24 sq. units
 - ✗ 2. 48 sq. units
 - ✗ 3. 32 sq. units
 - ✗ 4. 16 sq. units

Q.48 JM HK is related to NQ LO in a certain way based on the English alphabetical order. In the same way, MP KN is related to QT OR. To which of the following options is PS NQ related, following the same logic?

- Ans**
- ✗ 1. WTUR
 - ✓ 2. TWRU
 - ✗ 3. TWUR
 - ✗ 4. WTRU

Q.49 Which of the following statements is/are correct related to respiration?

- (i) Pyruvate is converted into ethanol and carbon dioxide in yeast during fermentation.
- (ii) The break-down of pyruvate using oxygen takes place in chloroplast.
- (iii) In muscle cells, pyruvate is converted into lactic acid.

- Ans**
- ✗ 1. Only (i) and (ii)
 - ✗ 2. Only (i)
 - ✓ 3. Only (i) and (iii)
 - ✗ 4. (i), (ii) and (iii)

Q.50 Which institution launched India's first-ever book on sports psychology?

- Ans**
- ✗ 1. Sports Authority of India (SAI)
 - ✓ 2. International Institute of Sports Management (IISM)
 - ✗ 3. Indian Institute of Management (IIM)
 - ✗ 4. National Sports University

Q.51 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some pens are sketch pens.

All sketch pens are erasers.

Some erasers are rulers.

Conclusions:

(I) Some rulers are sketch pens.

(II) Some erasers are pens.

- Ans**
- ✗ 1. Neither conclusion (I) nor (II) follows.
 - ✓ 2. Only conclusion (II) follows.
 - ✗ 3. Only conclusion (I) follows.
 - ✗ 4. Both conclusions (I) and (II) follow.

Q.52 Which of the following is NOT a characteristic of a gas?

- Ans**
- ☒ 1. The rate of diffusion is very high.
 - ☒ 2. It has a fixed shape.
 - ☒ 3. It is highly compressible.
 - ☒ 4. The particles are very loosely packed.

Q.53 What is the cause of the apparent elevation of a star's position when viewed near the horizon?

- Ans**
- ☒ 1. Atmospheric refraction of starlight towards the normal
 - ☒ 2. Reflection of starlight away from the normal
 - ☒ 3. Atmospheric absorption of starlight
 - ☒ 4. The gravitational force of Earth on starlight

Q.54 Which of the following is NOT an example of a homogeneous mixture?

- Ans**
- ☒ 1. Pure Air
 - ☒ 2. Orange juice with pulp
 - ☒ 3. Sugar solution
 - ☒ 4. Vinegar

Q.55 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 6 @ \$ 7 & 9 # 1 * £ 5 3 2 + % 8 4 Ω (Right)

How many such symbols are there, each of which is immediately preceded by a number and also immediately followed by another number?

- Ans**
- ☒ 1. 4
 - ☒ 2. 1
 - ☒ 3. 2
 - ☒ 4. 3

Q.56 In September 2024, researchers at (the) ____ developed a 'brain on a chip' that can store and process data in 16,500 states within molecular film.

- Ans**
- ☒ 1. Indian Institute of Space Sciences
 - ☒ 2. Indian Institute of Science (IISc)
 - ☒ 3. Indian Space Research Organisation (ISRO)
 - ☒ 4. IIT Bombay

Q.57 If 7, 12, 21 and k are in proportion, the value of k is:

- Ans**
- ☒ 1. 36
 - ☒ 2. 27
 - ☒ 3. 24
 - ☒ 4. 35

Q.58 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 5 1 8 3 6 3 6 8 4 5 7 6 7 1 9 2 4 6 2 7 8 6 1 8 8 1 7 7 3 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☒ 1. 2
 - ☒ 2. 3
 - ☒ 3. 5
 - ☒ 4. 4

Q.59 In a certain code language,

'A + B' means 'A is the sister of B',

'A - B' means 'A is the husband of B',

'A x B' means 'A is the mother of B'

and 'A ÷ B' means 'A is the son of B'.

How is Z related to C if 'X - Y x Z + A x B ÷ C'?

- Ans**
- ☒ 1. Wife's sister
 - ☒ 2. Daughter
 - ☒ 3. Wife's mother
 - ☒ 4. Mother

Q.60 A sum of money is distributed among four people A, B, C and D in the ratio 4 : 7 : 9 : 3. If B gets ₹600 more than A, then how much more will C get than D?

- Ans**
- ☒ 1. ₹800
 - ☒ 2. ₹600
 - ☒ 3. ₹1,200
 - ☒ 4. ₹1,400

Q.61 The potential energy possessed by an object of mass 8 kg when it is at a height of 5 m above the ground will be (g is acceleration due to gravity in SI unit):

- Ans**
- ☒ 1. 200g J
 - ☒ 2. 20g J
 - ☒ 3. 100g J
 - ☒ 4. 40g J

Q.62 Select the most appropriate hydrogen atom radius from the given options.

- Ans**
- ☒ 1. 10^{-12} m
 - ☒ 2. 10^{-6} m
 - ☒ 3. 10^{-10} m
 - ☒ 4. 10^{-8} m

Q.63 Among the following cases, which kind of magnetic field production is found similar to the magnetic-field of a bar magnet?

- Ans**
- ☐ 1. An infinitely long wire carrying current.
 - ☒ 2. A solenoid of finite length carrying current.
 - ☐ 3. A circular loop carrying current.
 - ☐ 4. A rectangular loop carrying current.

Q.64 After a hot sunny day, people sprinkle water on the roof or open ground because:

- Ans**
- ☐ 1. less latent heat of vaporisation of water helps to cool the hot surface
 - ☐ 2. large latent heat of vaporisation of water does not help to cool the hot surface
 - ☐ 3. large latent heat of vaporisation of water helps to heat the cold surface
 - ☒ 4. large latent heat of vaporisation of water helps to cool the hot surface

Q.65 Union Budget 2024-25 enhanced the limit of Mudra loans under the 'Tarun' category to ____ for entrepreneurs who have availed and successfully repaid previous loans.

- Ans**
- ☒ 1. ₹20 lakh
 - ☐ 2. ₹15 lakh
 - ☐ 3. ₹25 lakh
 - ☐ 4. ₹12 lakh

Q.66 What least digit must be assigned to k so that the 7-digit number 86325k6 is divisible by 11?

- Ans**
- ☐ 1. 4
 - ☐ 2. 1
 - ☐ 3. 2
 - ☒ 4. 3

Q.67 

- Ans**
- ☒ 1. 9
 - ☐ 2. 10
 - ☐ 3. 2
 - ☐ 4. 1

Q.68 What will come in the place of '?' in the following equation, if '-' and '+' are interchanged and '×' and '÷' are interchanged?

$$17 + 13 \times 3 \div 12 - 4 = ?$$

- Ans**
- ☒ 1. 221
 - ☐ 2. 211
 - ☐ 3. 206
 - ☐ 4. 241

Q.69 Which of the following statements is true regarding a dilute solution?

- Ans**
- ☐ 1. It contains a large amount of solute dissolved in a small amount of solvent.
 - ☒ 2. It has a small amount of solute dissolved in a large amount of solvent.
 - ☐ 3. It exhibits a heterogeneous appearance.
 - ☐ 4. It has an equal ratio of solute to solvent by mass.

Q.70 At which of the following temperatures does a liquid change into a solid upon cooling?

Ans ✓ 1. Freezing point

✗ 2. Boiling point

✗ 3. Condensation point

✗ 4. Melting point

Q.71 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Even though sugar is added in most of the food items cooked, it is not good for health.

Reasons:

I. Sugar adds more taste into any food being cooked.

II. Sugar is the most consumed material in the country

Ans ✗ 1. Both I and II are possible reasons.

✗ 2. Only II is a possible reason.

✓ 3. Only I is a possible reason.

✗ 4. Neither I nor II is a possible reason.

Q.72 As per the SDG India Index 2023-24 prepared by NITI Aayog, what is India's composite score?

Ans ✓ 1. 71

✗ 2. 60

✗ 3. 65

✗ 4. 95

Q.73 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(16, 4, 20)

(36, 9, 45)

Ans ✗ 1. (56, 12, 70)

✗ 2. (54, 14, 70)

✓ 3. (56, 14, 70)

✗ 4. (56, 14, 65)

Q.74 The problem of myopia in human eye can be corrected by using:

Ans ✗ 1. a plain glass plate

✗ 2. a convex lens of suitable power

✓ 3. a concave lens of suitable power

✗ 4. a convex mirror of suitable focal length

Q.75 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 - Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 54 :: 8 : Y

- Ans**
- ✓ 1. X = 11, Y = 39
 - ✗ 2. X = 11, Y = 36
 - ✗ 3. X = 10, Y = 59
 - ✗ 4. X = 10, Y = 39

Q.76 Which of the following reproduces by budding?

- Ans**
- ✗ 1. Mosquito
 - ✗ 2. Liver fluke
 - ✗ 3. Algae
 - ✓ 4. Hydra

Q.77 On simple interest, a certain sum of money amounts to ₹1,250 in 2 years and to ₹2,000 in 5 years. Find the rate of interest per annum (rounded off to two places of decimal).

- Ans**
- ✗ 1. 11.11%
 - ✓ 2. 33.33%
 - ✗ 3. 27.27%
 - ✗ 4. 16.67%

Q.78 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ✓ 1. OS-NR
 - ✗ 2. LP-KN
 - ✗ 3. IM-HK
 - ✗ 4. FJ-EH

Q.79 If $a - b = 1$ and $a^3 - b^3 = 61$, then the value of ab is :

- Ans**
- ✗ 1. -20
 - ✗ 2. 60
 - ✗ 3. 30
 - ✓ 4. 20

Q.80 Which of the following examples is NOT an example of combination reaction?

- Ans**
- ✓ 1. Formation of iron sulphate from copper sulphate and iron
 - ✗ 2. Burning of coal
 - ✗ 3. Formation of water
 - ✗ 4. Formation of slaked lime from quick lime

Q.81 What is the equivalent resistance of a series combination of resistors?

- Ans**
- ✓ 1. The sum of the individual resistances.
 - ✗ 2. The difference between the individual resistances.
 - ✗ 3. The reciprocal of the sum of the individual resistances.
 - ✗ 4. The product of the individual resistances.

Q.82 Who is the author of **INDIA'S ECONOMY 2024: Disparities in Fractured Democracy**?

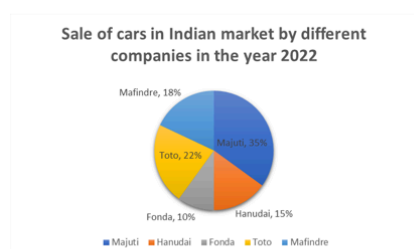
- Ans**
- ✗ 1. Sanjaya Baru
 - ✗ 2. Kingshuk Nag
 - ✗ 3. Milan Vaishnav
 - ✓ 4. Satyaki Roy

Q.83 By 20% decrease in the price of rice, people can buy 10 kg more rice for ₹100. What is the original price of 1 kg of rice?

- Ans**
- ✗ 1. ₹1.50
 - ✗ 2. ₹5.00
 - ✗ 3. ₹4.50
 - ✓ 4. ₹2.50

Q.84 Study the following pie-chart and answer the question that follows.

The following pie-chart shows the breakup of the percentage sale of cars by different companies in India in the year 2022.



If the total number of cars sold in India in the year 2022 was 15,00,000, then what was the number of cars sold by Mafindre in India in the year 2022?

- Ans**
- ✓ 1. 2,70,000
 - ✗ 2. 2,40,000
 - ✗ 3. 3,00,000
 - ✗ 4. 2,80,000

Q.85 Which of the following gases present in the atmosphere is used by terrestrial organisms for respiration?

- Ans**
- ✗ 1. Hydrogen
 - ✗ 2. Nitrogen
 - ✗ 3. Neon
 - ✓ 4. Oxygen

Q.86 The value of $\left[\frac{\cos 50^\circ}{1 + \sin 50^\circ} \right] + \left[\frac{1 + \sin 50^\circ}{\cos 50^\circ} \right]$ is:

- Ans**
- ✗ 1. $2 \cot 50^\circ$
 - ✗ 2. $2 \tan 50^\circ$
 - ✓ 3. $2 \sec 50^\circ$
 - ✗ 4. $2 \operatorname{cosec} 50^\circ$

Q.87 At the 2024 Paris Olympics, Manu Bhaker made history by becoming the first Indian woman to win an Olympic shooting medal and the first Indian to win ____ medals in shooting events.

- Ans**
- ☐ 1. 5
 - ☐ 2. 4
 - ☐ 3. 3
 - ☒ 4. 2

Q.88 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only five people sit between B and L. Z sits to the immediate left of L. Only one person sits between Z and C. A sits at some place to the left of Y but at some place to the right of X.

Who sits third from the left end of the line?

- Ans**
- ☐ 1. C
 - ☐ 2. Z
 - ☐ 3. Y
 - ☒ 4. A

Q.89 Ravi is younger than Kishan by 3 years. If the ages of Ravi and Kishan are in the ratio 7 : 8, then how old is Kishan?

- Ans**
- ☐ 1. 21 years
 - ☐ 2. 18 years
 - ☐ 3. 27 years
 - ☒ 4. 24 years

Q.90 Which of the following organisms show a parasitic nutritive strategy?

- Ans**
- ☐ 1. Mosses
 - ☐ 2. Acacia
 - ☒ 3. Cuscuta
 - ☐ 4. Orchids

Q.91 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

QL-GK-ON

MH-CG-KJ

- Ans**
- ☐ 1. PJ-EI-ML
 - ☐ 2. OJ-EH-MK
 - ☐ 3. PJ-EI-MK
 - ☒ 4. OJ-EI-ML

Q.92 Ramu has been given a tub of water with a refractive index of 1.33, a mug of oil with a refractive index of 1.46, a bottle of glycerine with a refractive index of 1.5 and a glass-slab with a refractive index of 1.65. Light will travel fastest in:

- Ans**
- ☐ 1. oil
 - ☐ 2. glycerine
 - ☒ 3. water
 - ☐ 4. glass-slab

Q.93 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ABC, EDH, IFM, MHR, ?

- Ans**
- ☒ 1. RSW
 - ☒ 2. QJW
 - ☐ 3. QIW
 - ☐ 4. QNW

Q.94 Which phenomenon is responsible for the blue colour of the sky?

- Ans**
- ☐ 1. Reflection
 - ☒ 2. Scattering of light
 - ☐ 3. Total internal reflection
 - ☐ 4. Atmospheric refraction

Q.95 The relation between power (P), voltage (V) and resistance (R) is given by ____.

- Ans**
- ☐ 1. $P = \frac{R^2}{V}$
 - ☐ 2. $P = \frac{R}{2V^2}$
 - ☐ 3. $P = V^2 R$
 - ☒ 4. $P = \frac{V^2}{R}$

Q.96 'When a sailor jumps out of a rowing boat, the boat moves backwards' is an example of which law of motion?

- Ans**
- ☐ 1. Law of inertia
 - ☐ 2. Newton's first law of motion
 - ☒ 3. Newton's third law of motion
 - ☐ 4. Newton's second law of motion

Q.97 In July 2024, the first Project PARI (Public Art of India), an initiative by the Ministry of Culture, Government of India, was organised in which of the following locations?

- Ans**
- ☒ 1. New Delhi
 - ☐ 2. Bengaluru
 - ☐ 3. Hyderabad
 - ☐ 4. Ahmedabad

Q.98 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$3 + 13 \times 26 \div 8 - 4 = ?$$

- Ans**
- ☐ 1. 53
 - ☐ 2. 43
 - ☒ 3. 63
 - ☐ 4. 73

Q.99 Hariteja walked to his school at a speed of 4 km/h and returned on a scooter at 20 km/h. His average speed during the two-way journey is:

- Ans**
- ☐ 1. 6 km/h
 - ☐ 2. 8 km/h
 - ☒ 3. $\frac{20}{3}$ km/h
 - ☐ 4. 12 km/h

Q.100 _____ is found as chromatin material in a non-dividing cell's structure.

- Ans**
- ☐ 1. Ribosome
 - ☐ 2. Nucleus
 - ☐ 3. RNA
 - ☒ 4. DNA

2024/12/29-11:33:00



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ LB Nagar
Test Date	28/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

There has been an increase in the number of thefts of bicycles being reported in the apartments in locality X in the last 2 months.

Effects:

(I) Police have instructed security guards of locality X to record details of all entries and exits and verify the phone numbers of all delivery personnel.

(II) Many apartment complexes have decided to install multiple CCTV cameras inside and outside their gates.

(III) More women police constables have been appointed in the police station adjoining locality X.

- Ans**
- ☒ 1. Only II is can be a possible effect
 - ☒ 2. Only I can be a possible effect
 - ☒ 3. Both I and II can be the possible effects
 - ☒ 4. Both II and III can be the possible effects

Q.2 If each vowel in the word FRIENDLY is changed to the letter immediately preceding it in the English alphabetical order and each consonant is changed to the letter immediately following it in the English alphabetical order, the how many letters will appear twice in the group of letters thus formed?

- Ans**
- ☒ 1. 3
 - ☒ 2. 1
 - ☒ 3. 2
 - ☒ 4. 0

Q.3 Which of the following statements is /are true about the field around a current carrying solenoid:

(i) The field inside the solenoid is uniform.

(ii) The field outside the solenoid is same in magnitude as the field inside the solenoid.

(iii) The field around the solenoid is similar to the field around a bar magnet.

- Ans**
- ☒ 1. Only (iii)
 - ☒ 2. Only (i)
 - ☒ 3. Both (i) and (iii)
 - ☒ 4. Both (ii) and (iii)

Q.4 Which of the following statements is INCORRECT?

- Ans
- ☐ 1. Yeast can put out small buds that separate and grow further.
 - ☒ 2. Plasmodium divides into many daughter cells simultaneously by binary fission.
 - ☐ 3. Binary fission occurs in a definite orientation in Leishmania.
 - ☐ 4. In Amoeba, the splitting of the two cells during division can take place in any plane.

Q.5 Which of the following is part of mechanical energy?

- Ans
- ☐ 1. Only Chemical energy
 - ☐ 2. Only Heat energy
 - ☐ 3. Only Light energy
 - ☒ 4. Potential energy

Q.6 VSUR is related to KHJG in a certain way based on the English alphabetical order. In the same way, YVXU is related to NKMJ. To which of the following options is SPRO related, following the same logic?

- Ans
- ☐ 1. GEDH
 - ☐ 2. HEDG
 - ☒ 3. HEGD
 - ☐ 4. GEHD

Q.7 The pH value of the neutral solution is _____.

- Ans
- ☒ 1. 7
 - ☐ 2. 5
 - ☐ 3. 14
 - ☐ 4. 0

Q.8 Justice Sanjiv Khanna took over as the ____ Chief Justice of India on 11 November 2024.

- Ans
- ☐ 1. 52nd
 - ☐ 2. 53rd
 - ☒ 3. 51st
 - ☐ 4. 50th

Q.9 Where was the 8th India Water Week 2024 held?

- Ans
- ☐ 1. Bangalore
 - ☐ 2. Indore
 - ☐ 3. Mumbai
 - ☒ 4. New Delhi

Q.10 If the simple interest on a sum of money at 8% per annum in 2 years is ₹2,000, find the compound interest on the same sum for the same period at the same rate in case of annual compounding.

- Ans
- ☐ 1. ₹1,960
 - ☐ 2. ₹2,040
 - ☐ 3. ₹1,660
 - ☒ 4. ₹2,080

Q.11 What compound is formed when a small amount of hydrochloric acid is added to a beaker containing copper oxide?

- Ans**
- ☐ 1. Copper (I) chloride
 - ☐ 2. Copper (IV) chloride
 - ☒ 3. Copper (II) chloride
 - ☐ 4. Copper (III) chloride

Q.12 The ratio of the radius of the base to the height of a cylinder is 3 : 1. If its volume is 9702 cm^3 , then the curved surface area of the cylinder is: (Use $\pi = \frac{22}{7}$)

- Ans**
- ☐ 1. 616 cm^2
 - ☐ 2. 668 cm^2
 - ☐ 3. 946 cm^2
 - ☒ 4. 924 cm^2

Q.13 If a 4-digit number 13z4 is divisible by 6, then the greatest possible value of digit 'z' is:

- Ans**
- ☐ 1. 1
 - ☒ 2. 7
 - ☐ 3. 4
 - ☐ 4. 3

Q.14 Work done can be defined as _____.

- Ans**
- ☒ 1. force $\times$ displacement
 - ☐ 2. force – displacement
 - ☐ 3. force / displacement
 - ☐ 4. force + displacement

Q.15 Which of the following pairs of metals are found in free state?

- Ans**
- ☐ 1. Gold and sodium
 - ☐ 2. Silver and potassium
 - ☒ 3. Gold and silver
 - ☐ 4. Sodium and potassium

Q.16 Which of the following parts of a plant does NOT take part in vegetative propagation?

- Ans**
- ☐ 1. Stem
 - ☐ 2. Root
 - ☒ 3. Flower
 - ☐ 4. Leaves

Q.17 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All schools are colleges.

No college is a university.

Conclusions:

(I) Some colleges are not schools.

(II) Some schools may be universities.

- Ans**
- ☐ 1. Only conclusion II follows
 - ☒ 2. Only conclusion I follows
 - ☐ 3. Both conclusions I and II follow
 - ☐ 4. Neither conclusion I nor II follows

Q.18 The distance between two points on a map is 5 cm. The scale of the map is 1 : 6,00,000. The actual distance between the two points (in km) is:

- Ans**
- ☐ 1. 300
 - ☐ 2. 3000
 - ☒ 3. 30
 - ☐ 4. 30,000

Q.19 If 12, 24, 45 and y are in proportion, then the value of y is:

- Ans**
- ☐ 1. 60
 - ☒ 2. 90
 - ☐ 3. 25
 - ☐ 4. 30

Q.20 For a given data, if mean and mode are 42 and 60, respectively, then find the median of the data using empirical relation.

- Ans**
- ☐ 1. 50
 - ☒ 2. 48
 - ☐ 3. 46
 - ☐ 4. 44

Q.21 In the process of photosynthesis, what happens to the carbohydrates (glucose) that are produced?

- Ans**
- ☐ 1. Carbohydrates are stored in the form of glycogen.
 - ☐ 2. All the carbohydrates are immediately used as energy.
 - ☒ 3. First, carbohydrates are utilised for energy production and the rest are stored in the form of starch.
 - ☐ 4. All the carbohydrates are stored in the form of a starch.

Q.22 In a certain code language, 'TREF' is coded as '3528' and 'KERF' is coded as '5438'. What is the code for 'K' in the given code language?

- Ans**
- ☐ 1. 5
 - ☐ 2. 8
 - ☒ 3. 4
 - ☐ 4. 3

Q.23 A is twice as old as B. B is $\frac{1}{3}$ as old as C. The sum of ages of A, B and C is 42 years, find the sum of the ages of A and B.

- Ans**
- ☐ 1. 12 years
 - ☐ 2. 23 years
 - ☐ 3. 15 years
 - ☒ 4. 21 years

Q.24 In a concave mirror, the object is placed between the pole and the focus point of the mirror. What is the nature of the image?

- Ans**
- ☒ 1. Virtual and erect
 - ☐ 2. Real and erect
 - ☐ 3. Virtual and inverted
 - ☐ 4. Real and inverted

Q.25 When a body falls freely under gravity, then which of the following quantities DOES NOT remain constant:

- Ans**
- ☐ 1. Acceleration
 - ☐ 2. Universal Gravitational Constant
 - ☐ 3. Mass
 - ☒ 4. Distance

Q.26 _____ is the process through which plants lose water in the form of water vapour.

- Ans**
- ☒ 1. Transpiration
 - ☐ 2. Transcription
 - ☐ 3. Transportation
 - ☐ 4. Imbibition

Q.27 Kevin starts from point A and drives 7 km towards the North. He then takes two simultaneous right turns and drives 2 km and 1 km, respectively. He then takes a left turn and drives 3 km. He then takes two simultaneous right turns and drives 3 km each. He takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☐ 1. 1 km West
 - ☒ 2. 2 km West
 - ☐ 3. 2 km North
 - ☐ 4. 2 km South

Q.28 A and B working alone can do a work in 40 days and 30 days, respectively. They started the work together, but B left after some time and A finished the remaining work in 5 days. How many days after starting did B leave the work?

- Ans**
- ☐ 1. 14 days
 - ☐ 2. 16 days
 - ☒ 3. 15 days
 - ☐ 4. 12 days

Q.29 $\sec^2 A + (\operatorname{cosec}^2 A - 1) - (1 + \tan^2 A) - \cot^2 A =$ _____.

- Ans**
- ☒ 1. 0
 - ☐ 2. 1
 - ☐ 3. $\cot^2 A$
 - ☐ 4. $\sec^2 A$

Q.30 In November 2024, Indian Space Research Organisation (ISRO) started the country's first analogue space mission at which of the following places to simulate life in an interplanetary habitat?

- Ans**
- ☐ 1. Mount Abu
 - ☐ 2. Itanagar
 - ☐ 3. Rameshwaram
 - ☒ 4. Leh

Q.31 What is the SI unit of acceleration?

- Ans**
- ☒ 1. m s^{-2}
 - ☐ 2. m s^{-1}
 - ☐ 3. m s
 - ☐ 4. m s^2

Q.32 Which of the following elements is extracted by electrolysis reduction?

- Ans**
- ☐ 1. Pb
 - ☐ 2. Ag
 - ☒ 3. Na
 - ☐ 4. Zn

Q.33 The value of $\frac{0.5 \times 10.6 - 0.2 \times 1.4}{0.4}$ is:

- Ans**
- ☐ 1. 125.5
 - ☐ 2. 1.255
 - ☒ 3. 12.55
 - ☐ 4. 12.25

Q.34 In a certain code language, 'someday in paradise' is written as 'yd pl ws' and 'in dense forest' is written as 'fc ws nm'. How is 'in' coded in the given language?

- Ans**
- ☐ 1. yd
 - ☐ 2. nm
 - ☒ 3. ws
 - ☐ 4. fc

Q.35 Which of the following statements is/are correct related to eco-system?

- (i) Non-biodegradable substance harms the various members of eco-system.
- (ii) Non-biodegradable substances break-down by biological processes.
- (iii) Non-biodegradable substances never persist in the environment.

- Ans**
- ☐ 1. Only (ii) and (iii)
 - ☐ 2. (i), (ii) and (iii)
 - ☒ 3. Only (i)
 - ☐ 4. Only (i) and (ii)

Q.36 Consider a ray passing through the principal focus and not parallel to the principal axis of a concave mirror, after reflection, it will:

- Ans**
- ✓ 1. emerge parallel to the principal axis
 - ✗ 2. emerge obliquely to the principal axis
 - ✗ 3. pass through the centre of curvature
 - ✗ 4. pass through the principal focus

Q.37 Which of the following diseases is caused by Leishmania?

- Ans**
- ✗ 1. Dengue
 - ✗ 2. Malaria
 - ✗ 3. Anaemia
 - ✓ 4. Kala-azar

Q.38 If + means $\times$, $\times$ means $\div$, $\div$ means $+$, and $\div$ means $+$, then what will come in place of the question mark (?) in the following equation?

$$16 \div 96 \times 6 - 4 + 20 = ?$$

- Ans**
- ✗ 1. 56
 - ✗ 2. 54
 - ✗ 3. 50
 - ✓ 4. 60

Q.39 The average of the first 50 natural numbers is:

- Ans**
- ✗ 1. 21.25
 - ✓ 2. 25.5
 - ✗ 3. 25
 - ✗ 4. 12.25

Q.40 Arvind spends 75% of his income. His income is increased by 20% and he increased his expenditure by 10%. His savings are increased by:

- Ans**
- ✗ 1. 37.5%
 - ✗ 2. 25%
 - ✗ 3. 10%
 - ✓ 4. 50%

Q.41 Iodine is necessary for which gland to make the thyroxine hormone?

- Ans**
- ✗ 1. Pineal gland
 - ✓ 2. Thyroid gland
 - ✗ 3. Thymus
 - ✗ 4. Pancreas

Q.42 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

17, 20, 26, 35, 47, ?

- Ans**
- ✗ 1. 64
 - ✗ 2. 63
 - ✓ 3. 62
 - ✗ 4. 60

Q.43 If $x + y = 16$ and $xy = 48$, find the value of $x^2 + y^2$.

- Ans**
- ☐ 1. 150
 - ☐ 2. 144
 - ☒ 3. 160
 - ☐ 4. 164

Q.44 Which of the following is a characteristic property of acids?

- Ans**
- ☐ 1. They turn red litmus paper blue.
 - ☐ 2. They have a pH greater than 7.
 - ☒ 3. They turn blue litmus paper red.
 - ☐ 4. They have a slippery feel.

Q.45 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. Only three people sit to the right of A. B sits second from the left end. F is an immediate neighbour of C and G. D sits second to the left of C. How many people sit between E and D?

- Ans**
- ☒ 1. One
 - ☐ 2. Two
 - ☐ 3. Three
 - ☐ 4. Four

Q.46 The natural tendency of objects to resist a change in their state of rest or of uniform motion is called _____.

- Ans**
- ☐ 1. motion
 - ☐ 2. momentum
 - ☒ 3. inertia
 - ☐ 4. force

Q.47 To promote Indian Culture and Art, President Draupadi Murmu conferred which of the following awards in October 2024?

- Ans**
- ☐ 1. 69th National Film Awards
 - ☐ 2. 67th National Film Awards
 - ☐ 3. 68th National Film Awards
 - ☒ 4. 70th National Film Awards

Q.48 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 18.8 :: 21 : Y

- Ans**
- ☐ 1. X = 11, Y = 29.4
 - ☐ 2. X = 17, Y = 22.6
 - ☒ 3. X = 15, Y = 24.8
 - ☐ 4. X = 20, Y = 26.8

- Q.49** If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', then the resultant of which of the following would be 113?
- Ans** ☒ 1. $96 \text{ D } 12 \text{ B } 2 \text{ C } (42 \text{ A } 6) \text{ B } 3 \text{ C } 20$
☐ 2. $96 \text{ C } 12 \text{ B } 2 \text{ D } (42 \text{ A } 6) \text{ D } 3 \text{ C } 20$
☐ 3. $96 \text{ D } 12 \text{ A } 2 \text{ C } (42 \text{ B } 6) \text{ A } 3 \text{ C } 20$
☐ 4. $96 \text{ C } 12 \text{ A } 2 \text{ D } (42 \text{ A } 6) \text{ A } 3 \text{ D } 20$
- Q.50** If John travels 90 km at a speed of 30 km/h and returns at a speed of 60 km/h, his average speed is:
- Ans** ☐ 1. 60 km/h
☐ 2. 30 km/h
☒ 3. 40 km/h
☐ 4. 45 km/h
- Q.51** Who is one of the authors of the book 'Overthrowing Cricket's Empire: How Every Team Beat England for the First Time' released in July 2024?
- Ans** ☒ 1. Abishek Mukherjee
☐ 2. Aniket Mishra
☐ 3. R Ashwin
☐ 4. Joy Bhattacharjya
- Q.52** Which of the following statements is correct related to male reproductive system?
- Ans** ☐ 1. Testes are located in the abdominal cavity.
☐ 2. Sperm formation requires higher temperature than the normal body temperature.
☐ 3. Formation of sperm takes place in seminal vessel.
☒ 4. Testes secrete testosterone hormone.
- Q.53** Apical meristem increases the _____ of the stem and the root.
- Ans** ☒ 1. length
☐ 2. girth
☐ 3. branches
☐ 4. flowers
- Q.54** Ramesh invested ₹1,232 at 5% p.a. simple interest in a bank. What amount will he get after 3 years?
- Ans** ☒ 1. ₹1,416.80
☐ 2. ₹1,285.80
☐ 3. ₹1,848.80
☐ 4. ₹2,145.80
- Q.55** Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. M is kept second from the bottom. Only three boxes are kept between M and B. P is kept at one of the positions below M. Only E is kept between B and F. A is kept at one of the positions above B. How many boxes are kept between L and P?
- Ans** ☐ 1. Four
☐ 2. Two
☐ 3. Three
☒ 4. One

Q.56 Which of the following organisms have three-chambered hearts?

- Ans**
- ☐ 1. Birds
 - ☐ 2. Mammals
 - ☐ 3. Fishes
 - ☒ 4. Amphibians

Q.57 If the angles $(5x - 2)^\circ$ and 82° form a pair of supplementary angles, then the value of x is:

- Ans**
- ☐ 1. 45
 - ☐ 2. 90
 - ☐ 3. 30
 - ☒ 4. 20

Q.58 Who was appointed as the new Managing Director of Boeing Defence India in February 2024?

- Ans**
- ☐ 1. Vijay Mehta
 - ☐ 2. Sanjay Gupta
 - ☐ 3. Arun Kumar
 - ☒ 4. Nikhil Joshi

Q.59 According to one of the laws of refraction, the _____ ray, the refracted ray and the normal to the interface of two transparent media at the point of incidence, all lie in the same plane.

- Ans**
- ☐ 1. Reflected
 - ☐ 2. Parallel
 - ☐ 3. Emergent
 - ☒ 4. Incident

Q.60 Asexual reproduction by fragmentation occurs:

- Ans**
- ☒ 1. only in simple body organised multicellular organisms
 - ☐ 2. only in complex body organised multicellular organisms
 - ☐ 3. only in unicellular organisms
 - ☐ 4. in all multicellular organisms

Q.61 In a certain code language,
'P + Q' means 'P is the mother of Q',
'P - Q' means 'P is the husband of Q',
'P x Q' means 'P is the sister of Q' and
'P ÷ Q' means 'P is the brother of Q'.
How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☒ 1. Father's mother
 - ☐ 2. Father's sister
 - ☐ 3. Mother's mother
 - ☐ 4. Mother's sister

Q.62 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. PRU
 - ☒ 2. UWZ
 - ☒ 3. JLP
 - ☒ 4. FHK

Q.63 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. MTP
 - ☒ 2. RYT
 - ☒ 3. FMH
 - ☒ 4. JQL

Q.64 The force of gravitation between two bodies is F ; if the mass of one of the bodies is increased to four times its initial value, then the gravitational force between the bodies will now be:

- Ans**
- ☒ 1. $4F$
 - ☒ 2. $2F$
 - ☒ 3. $F/4$
 - ☒ 4. F

Q.65 The ratio between volume of a sphere and volume of a circumscribing right circular cylinder is:

- Ans**
- ☒ 1. 1 : 1
 - ☒ 2. 2 : 1
 - ☒ 3. 1 : 2
 - ☒ 4. 2 : 3

Q.66 Carbon has the unique ability to form bonds with other atoms of carbon. This property is known as _____.

- Ans**
- ☒ 1. Crystallisation
 - ☒ 2. catenation
 - ☒ 3. cyclisation
 - ☒ 4. Isomerisation

Q.67 Which of the following is the longest part of the alimentary canal?

- Ans**
- ☒ 1. Food pipe
 - ☒ 2. Large intestine
 - ☒ 3. Small intestine
 - ☒ 4. Stomach

Q.68 The magnetic field due to a current carrying coil increases when:

- Ans**
- ☒ 1. current through the coil is increased
 - ☐ 2. current through the coil is decreased
 - ☐ 3. One moves away from the coil
 - ☐ 4. number of turns of the coil is decreased

Q.69 A positive number, when added to its square, gives 56. The number is:

- Ans**
- ☐ 1. 8
 - ☒ 2. 7
 - ☐ 3. 9
 - ☐ 4. 12

Q.70 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit to the right of Q. Only two people sit between Q and B. Only two people sit between F and P. P sits to the immediate left of Q. E sits to the immediate right of R. Who sits at the third position from the left end of the row?

- Ans**
- ☐ 1. B
 - ☐ 2. R
 - ☒ 3. A
 - ☐ 4. P

Q.71 Which of the following is NOT the characteristic of particles of the matter?

- Ans**
- ☒ 1. They are very large in size.
 - ☐ 2. They attract each other.
 - ☐ 3. They are continuously moving.
 - ☐ 4. They have space between them.

Q.72 By defeating which state's team had Punjab won the Syed Mushtaq Ali T20 Trophy at the IS Bindra PCA Stadium in November 2023?

- Ans**
- ☐ 1. Madhya Pradesh
 - ☒ 2. Gujarat
 - ☐ 3. Maharashtra
 - ☐ 4. Karnataka

Q.73 Who among the following from the Indian state of Odisha won the third Rohini Nayar Prize for his outstanding contribution to rural development?

- Ans**
- ☐ 1. Deenanath Rajput
 - ☐ 2. Azim Premji
 - ☐ 3. Sethrichem Sangtam
 - ☒ 4. Anil Pradhan

Q.74 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All shirts are pants.

Some pants are tie.

Conclusions:

(I) At least some pants are shirts.

(II) Some shirts are tie.

- Ans**
- ☒ 1. Both conclusions I and II follow
 - ☒ 2. Only conclusion I follows
 - ☒ 3. Neither conclusion I nor II follows
 - ☒ 4. Only conclusion II follows

Q.75 Which of the following is the most common application of plaster of Paris?

- Ans**
- ☒ 1. Remove the hardness of water
 - ☒ 2. Fire extinguisher
 - ☒ 3. Creating casts for supporting fractured bones
 - ☒ 4. Baking

Q.76 Which of the following is NOT a characteristic of a solution?

- Ans**
- ☒ 1. Because of very small particle size, particles do not scatter a beam of light passing through the solution.
 - ☒ 2. The particles of a solution are smaller than 1 nm (10^{-9} metre) in diameter.
 - ☒ 3. The solute particles can be separated from the mixture by the process of filtration.
 - ☒ 4. A solution is a homogenous mixture.

Q.77 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

YES, ZGV, AIY, BKB, ?

- Ans**
- ☒ 1. CMD
 - ☒ 2. CMF
 - ☒ 3. CME
 - ☒ 4. CNE

Q.78 In the set {61, 62...100}, the sum of the second greatest and the second smallest prime numbers is:

- Ans**
- ☒ 1. 158
 - ☒ 2. 156
 - ☒ 3. 150
 - ☒ 4. 164

Q.79 Three candidates contested in an election and received 1036, 7044 and 12,120 votes, respectively. What percentage of the total number of votes did the winning candidate get?

- Ans**
- ☒ 1. 90%
 - ☒ 2. 57%
 - ☒ 3. 60%
 - ☒ 4. 65%

Q.80 A dishonest shopkeeper professes to sell his goods at cost price. However, he uses a false weight and thus gains 25%. For a kg, he uses a weight of:

- Ans**
- ☐ 1. 700 gm
 - ☒ 2. 800 gm
 - ☐ 3. 900 gm
 - ☐ 4. 850 gm

Q.81 Which of following pairs belongs to homologous series of alkenes?

- Ans**
- ☐ 1. CH_4 and C_2H_4
 - ☐ 2. C_2H_6 and C_3H_{10}
 - ☒ 3. C_3H_6 and C_4H_8
 - ☐ 4. CH_4 and C_4H_8

Q.82 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JAIL - ALIJ - LIAJ

ZEAL - ELAZ - LAEZ

- Ans**
- ☐ 1. COLD - ODLC - LCOD
 - ☐ 2. MAIN - AMIN - NAIM
 - ☐ 3. GILE - GLIE - ELIG
 - ☒ 4. BORE - OERB - EROB

Q.83 The position(s) of how many letters will remain unchanged if each of the letters in the word ARTICLE is arranged in the English alphabetical order ?

- Ans**
- ☐ 1. 1
 - ☒ 2. 2
 - ☐ 3. 0
 - ☐ 4. 3

Q.84 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some rocks are apples.

Some apples are horses.

Some horses are nails.

Conclusions:

(I) Some nails are apples.

(II) Some horses are rocks.

- Ans**
- ☐ 1. Both conclusions (I) and (II) follow.
 - ☐ 2. Only conclusion (I) follows.
 - ☐ 3. Only conclusion (II) follows.
 - ☒ 4. Neither conclusion (I) nor (II) follows.

Q.85 Which of the following Asian countries conducted the '8th International Ancient Arts Festival and Symposium' in November 2024?

- Ans
- ☐ 1. Bhutan
 - ☐ 2. Bangladesh
 - ☐ 3. Nepal
 - ☒ 4. India

Q.86 A pipe can fill a tank in 12 hours. Another pipe can empty the filled tank in 18 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans
- ☐ 1. 48
 - ☒ 2. 12
 - ☐ 3. 24
 - ☐ 4. 36

Q.87 Select the bisexual flower from the provided options.

- Ans
- ☐ 1. Papaya
 - ☒ 2. Mustard
 - ☐ 3. Watermelon
 - ☐ 4. Pumpkin

Q.88 To gather intelligence about demand and supply of drugs in border villages, Punjab police launched which mission in association with Border Security Force (BSF) and Village Defence Committees (VDCs) in June 2024?

- Ans
- ☐ 1. Mission Mukti
 - ☐ 2. Mission Sathi
 - ☐ 3. Mission Madad
 - ☒ 4. Mission Nishchay

Q.89 When an object is thrown upward, the force of gravity is _____.

- Ans
- ☐ 1. independent of direction of motion
 - ☒ 2. opposite to the direction of motion
 - ☐ 3. Zero
 - ☐ 4. the same as the direction of motion

Q.90 Express $0.\overline{52}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans
- ☐ 1. $\frac{53}{99}$
 - ☐ 2. $\frac{50}{99}$
 - ☐ 3. $\frac{52}{90}$
 - ☒ 4. $\frac{52}{99}$

Q.91 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ZSN, QJE, HAV, YRM, ?

- Ans**
- ✓ 1. PID
 - ✗ 2. PJD
 - ✗ 3. PJC
 - ✗ 4. PIC

Q.92 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the cost of 2 tables and 2 chairs combinedly?

- Ans**
- ✓ 1. ₹505
 - ✗ 2. ₹485
 - ✗ 3. ₹545
 - ✗ 4. ₹525

Q.93 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.
(Left) 2 9 # 1 * £ & % 4 6 @ 8 \$ 7 & 3 Ω 5 (Right)

How many such symbols are there, each of which is immediately preceded by a symbol and also immediately followed by an odd number?

- Ans**
- ✗ 1. Two
 - ✓ 2. None
 - ✗ 3. More than two
 - ✗ 4. One

Q.94 Two successive discounts of 12% and 15% on any number of toys bought are equivalent to a single discount of:

- Ans**
- ✓ 1. 25.2%
 - ✗ 2. 26%
 - ✗ 3. 26.2%
 - ✗ 4. 27%

Q.95 Rough endoplasmic reticulum looks rough under a microscope because it has particles called _____ attached to its surface.

- Ans**
- ✗ 1. chromosomes
 - ✗ 2. lysosomes
 - ✗ 3. protein particles
 - ✓ 4. ribosomes

Q.96 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 96 :: 53 : Y

- Ans**
- ✗ 1. X = 58, Y = 112
 - ✗ 2. X = 52, Y = 104
 - ✓ 3. X = 47, Y = 108
 - ✗ 4. X = 49, Y = 118

Q.97 A body is thrown up and it reaches a height of 5m and then falls down, the total displacement and the total distance covered by the body respectively would be:

- Ans**
- ☐ 1. 10m, 0m
 - ☐ 2. 5m, 5m
 - ☒ 3. 0m, 10m
 - ☐ 4. 0m, 0m

Q.98 What is the mass number of an atom having 13 protons and 14 neutrons?

- Ans**
- ☒ 1. 27 u
 - ☐ 2. 14 u
 - ☐ 3. 13 u
 - ☐ 4. 1 u

Q.99 Which of the following compounds undergoes thermal decomposition to produce calcium oxide and carbon dioxide?

- Ans**
- ☐ 1. Calcium nitrate
 - ☐ 2. Calcium chloride
 - ☒ 3. Calcium carbonate
 - ☐ 4. Calcium sulphate

Q.100 In the Earth's crust, metal ores are present in the form of _____.

- Ans**
- ☐ 1. only sulphides
 - ☐ 2. only carbonates
 - ☐ 3. only oxides
 - ☒ 4. oxides, sulphides and carbonates

2024/12/29-16:59:16



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	ION Digital Zone iDZ Sector 4
Test Date	28/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 If + means $\times$, $\times$ means $\div$, and $\div$ means $+$, then what will come in place of the question mark (?) in the following equation?

$$27 \div 66 \times 11 - 7 + 10 = ?$$

- Ans**
- ☒ 1. 56
 - ☒ 2. 58
 - ☒ 3. 60
 - ☒ 4. 59

Q.2 If each vowel in the word DREAMS is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order and the set of letters thus arrived are then rearranged in English alphabetical order, then which of the following letters will be fourth from the right in the group of letters thus formed?

- Ans**
- ☒ 1. E
 - ☒ 2. S
 - ☒ 3. F
 - ☒ 4. N

Q.3 If each vowel in the word PLASTID is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order, and the set of letters thus arrived are then rearranged in reverse of English alphabetical order, then which of the following letters will be third from the left in the group of letter thus formed?

- Ans**
- ☒ 1. O
 - ☒ 2. R
 - ☒ 3. H
 - ☒ 4. K

Q.4 A dealer buys three varieties of apples at ₹50, ₹40 and ₹30 per kilogram respectively. He mixes them in the ratio 2 : 4 : 9 respectively, by weight, and sells them at a profit of 30%. At what approximate price (per kilogram) does he sell the mixed variety of apples?

- Ans**
- ☒ 1. ₹10.80
 - ☒ 2. ₹75.00
 - ☒ 3. ₹23.50
 - ☒ 4. ₹45.90

Q.5 A can do a piece of work in 5 days. B can do it in 20 days. With the assistance of C, they completed the work in 2 days. C alone can do it in _____ days.

- Ans**
- ☐ 1. 5
 - ☐ 2. 3
 - ☐ 3. 6
 - ☒ 4. 4

Q.6 Which team won the Khelo India Para Games 2023 held in New Delhi in December 2023?

- Ans**
- ☐ 1. Tamil Nadu
 - ☐ 2. Uttar Pradesh
 - ☐ 3. Gujarat
 - ☒ 4. Haryana

Q.7 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. AD – YW
 - ☐ 2. BH – GK
 - ☐ 3. TZ – YC
 - ☐ 4. WC – BF

Q.8 Find the magnitude of applied force on a box of mass 10 kg for 20 s. It increases the box's velocity from 5 m s^{-1} to 15 m s^{-1} .

- Ans**
- ☐ 1. 4 N
 - ☐ 2. 10 N
 - ☐ 3. 1 N
 - ☒ 4. 5 N

Q.9 Which of the given statements is/are correct?

- a) There are two types of waste: biodegradable and non-biodegradable.
- b) We should collect dry waste and wet waste separately.

- Ans**
- ☐ 1. Neither a) nor b)
 - ☐ 2. 
 - ☐ 3. Only b)
 - ☒ 4. Both a) and b)

Q.10 The ratio of copper and zinc in the brass is 13 : 7. How much zinc will there be in 100 kg of brass?

- Ans**
- ☐ 1. 14 kg
 - ☐ 2. 42 kg
 - ☒ 3. 35 kg
 - ☐ 4. 70 kg

Q.11 Which of the following statements about a colloidal solution is INCORRECT?

- Ans**
- ☐ 1. Fog is an example of a colloidal solution.
 - ☒ 2. Milk is not a colloidal solution.
 - ☐ 3. Components cannot be separated by the process of filtration.
 - ☐ 4. Colloidal solutions are a heterogeneous mixture.

Q.12 In surrogacy cases, the surrogate as well as the commissioning mother may be granted maternity leave of how many days, in case either or both of them are government servants, as per new rule passed by the Indian Government in June 2024?

- Ans**
- ☐ 1. 90
 - ☐ 2. 30
 - ☐ 3. 45
 - ☒ 4. 180

Q.13 The smallest ratio out of 1 : 1, 2 : 1, 1 : 3 and 3 : 1 is:

- Ans**
- ☐ 1. 1 : 1
 - ☐ 2. 3 : 1
 - ☒ 3. 1 : 3
 - ☐ 4. 2 : 1

Q.14 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

HN18, KQ27, NT36, QW45, ?

- Ans**
- ☒ 1. TZ54
 - ☐ 2. TZ55
 - ☐ 3. SY55
 - ☐ 4. SY54

Q.15 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

19, 26, 33, 40, 47, ?

- Ans**
- ☒ 1. 54
 - ☐ 2. 52
 - ☐ 3. 53
 - ☐ 4. 51

Q.16 How many seats did the Indian National Congress win in Rajasthan in Lok Sabha election 2024?

- Ans**
- ☐ 1. 14
 - ☒ 2. 8
 - ☐ 3. 25
 - ☐ 4. 1

Q.17 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All roses are lilies.

No lily is a marigold.

Conclusions:

(I) All lilies are roses.

(II) No rose is a marigold.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☒ 2. Only conclusion II follows
 - ☐ 3. Neither conclusion I nor II follows
 - ☐ 4. Both conclusions I and II follow

Q.18 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(6, 12, 48)

(8, 16, 64)

- Ans**
- ☐ 1. (5, 30, 120)
 - ☐ 2. (15, 40, 120)
 - ☐ 3. (15, 30, 130)
 - ☒ 4. (15, 30, 120)

Q.19 _____ is useful for the survival of species over time.

- Ans**
- ☐ 1. Budding
 - ☐ 2. Population
 - ☒ 3. Variation
 - ☐ 4. Reproduction

Q.20 Which part of the flower grows and ripens to form a fruit?

- Ans**
- ☐ 1. Petal
 - ☒ 2. Ovary
 - ☐ 3. Anther
 - ☐ 4. Pollen tube

Q.21 Who among the following is a Tamil Nadu bus conductor, known for planting 3 lakh saplings over 30 years, has won multiple awards for his eco-activism?

- Ans**
- ☐ 1. MS Swaminathan
 - ☒ 2. Marimuthu Yoganathan
 - ☐ 3. Vijay Kumar
 - ☐ 4. Sundar Pichai

Q.22 The wickets taken by a bowler in 10 cricket matches are 2, 6, 4, 5, 0, 2, 1, 3, 2, 3. The mode of the data is:

- Ans**
- ☐ 1. 0
 - ☒ 2. 2
 - ☐ 3. 1
 - ☐ 4. 3

Q.23 In a certain code language, 'POEM' is coded as '7591' and 'MINT' is coded as '6728'. What is the code for 'M' in the given code language?

- Ans**
- ☒ 1. 7
 - ☐ 2. 2
 - ☐ 3. 1
 - ☐ 4. 6

Q.24 Identify the process with the given description.

'The seed contains the future plant or embryo which develops into a seedling under appropriate conditions'.

Ans ☒ 1. Germination

☐ 2. Plantation

☐ 3. Fermentation

☐ 4. Regeneration

Q.25 If a stone is thrown up, the value of acceleration due to gravity 'g' will be taken as _____.

Ans ☐ 1. infinite

☒ 2. negative

☐ 3. zero

☐ 4. positive

Q.26 The pressure exerted on a body is 10 Nm^{-2} , if the area of the body is 2 m^2 ; then the thrust acting on the body will be:

Ans ☐ 1. 5 N

☒ 2. 20 N

☐ 3. 10 N

☐ 4. 2 N

Q.27 Where is glucose converted into pyruvate?

Ans ☐ 1. Mitochondria

☐ 2. Ribosome

☐ 3. Golgi-complex

☒ 4. Cytoplasm

Q.28 The sum of three consecutive multiples of 9 is 2457, find the smallest one.

Ans ☒ 1. 810

☐ 2. 819

☐ 3. 999

☐ 4. 

Q.29 Where was the Ministry of Coal's first-ever coal gallery, an exhibition titled 'Black Diamond: Unveiling the Depths,' inaugurated in October 2024?

Ans ☒ 1. New Delhi

☐ 2. Ranchi

☐ 3. Dhanbad

☐ 4. Raipur

Q.30 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

HE-JG-LN

MJ-OL-QS

Ans ☐ 1. OL-QN-ST

☐ 2. RO-TQ-VW

☒ 3. QN-SP-UW

☐ 4. PM-RO-TU

- Q.31** An electric lamp, whose resistance is $10\ \Omega$, and a conductor of $2\ \Omega$ resistance are connected to a $24\ \text{V}$ battery in series. Then the current through the circuit will be _____.
- Ans** ☒ 1. $1\ \text{A}$
☒ 2. $3\ \text{A}$
☒ 3. $2\ \text{A}$
☒ 4. $4\ \text{A}$
- Q.32** If a 4-digit number $12z4$ is divisible by 4, then the greatest possible value of 'z' is:
- Ans** ☒ 1. 2
☒ 2. 8
☒ 3. 6
☒ 4. 4
- Q.33** What happens to the motion of an object when balanced forces act on it?
- Ans** ☒ 1. Its state of motion remains unchanged.
☒ 2. It speeds up.
☒ 3. It changes its direction of motion.
☒ 4. It slows down.
- Q.34** In September 2024, L&T Semiconductor Technologies (SiLT) signed an agreement with which of the following companies to co-develop advanced processors for edge devices, hybrid cloud systems and areas like mobility, industrial, energy and servers?
- Ans** ☒ 1. Nvidia
☒ 2. Intel
☒ 3. IBM
☒ 4. Dell
- Q.35** D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only one person sits between F and G when counted from the right of F. Only one person sits between G and D when counted from right of G. Only one person sits between F and L when counted from left of F. Only two people sit between E and D when counted from left of D. Only one person sits between N and L when counted from right of N. Who sits to the immediate right and left of M, respectively?
- Ans** ☒ 1. E and N
☒ 2. N and E
☒ 3. F and L
☒ 4. D and E
- Q.36** A shopkeeper sells an item for ₹571.20 after giving two successive discounts of 20% and 15% on its marked price. What is the marked price (in ₹) of the item?
- Ans** ☒ 1. 780
☒ 2. 840
☒ 3. 820
☒ 4. 760
- Q.37** The displacement of a body is perpendicular to the direction in which the force is applied; the work done in this case will be:
- Ans** ☒ 1. Zero
☒ 2. Negative
☒ 3. Infinite
☒ 4. Positive

- Q.38** The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. What is the sum of the present age of Amit and Amita?
- Ans** ☒ 1. 40 years
☒ 2. 50 years
☒ 3. 60 years
☒ 4. 70 years
- Q.39** Cranial nerves arising from the brain and spinal nerves arising from the spinal cord together constitute the:
- Ans** ☒ 1. autonomic nervous system
☒ 2. central nervous system
☒ 3. peripheral nervous system
☒ 4. endocrine system
- Q.40** What are the balanced products of the following reaction?
- $\text{Na}_2\text{SO}_4(\text{aq}) + \text{BaCl}_2(\text{aq}) \rightarrow \text{_____} + \text{_____}$
- Ans** ☒ 1. $\text{BaSO}_4(\text{s}) + 2\text{NaCl}(\text{aq})$
☒ 2. $2\text{BaSO}_2(\text{s}) + 2\text{NaCl}(\text{aq}) + 2\text{O}_2(\text{g})$
☒ 3. $\text{BaSO}_2(\text{s}) + \text{NaCl}(\text{aq}) + \text{O}_2(\text{g})$
☒ 4. $\text{BaSO}_4(\text{s}) + 2\text{NaCl}_2(\text{aq})$
- Q.41** Burning of unsaturated compounds gives which of the following?
- Ans** ☒ 1. Yellow flame
☒ 2. Clean flame
☒ 3. Red flame
☒ 4. Green flame
- Q.42** In a certain code language,
'P + Q' means 'P is the mother of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the father of Q' and
'P ÷ Q' means 'P is the brother of Q'.
How is A related to E if 'A + B - C x D ÷ E'?
- Ans** ☒ 1. Father's mother
☒ 2. Mother's sister
☒ 3. Mother's mother
☒ 4. Father's sister
- Q.43** In a certain code language, 'PAIN' is coded as '9315' and 'LIFT' is coded as '4256'. What is the code for 'T' in the given code language?
- Ans** ☒ 1. 5
☒ 2. 4
☒ 3. 1
☒ 4. 2

Q.44 Simplify the following expression:

$$\frac{\cos \theta}{1 - \sin \theta} + \frac{1 - \sin \theta}{\cos \theta}$$

- Ans**
- ✓ 1. $2 \sec \theta$
 - ✗ 2. $2 \sin \theta$
 - ✗ 3. $1 + 2 \sin \theta$
 - ✗ 4. $2 \cos \theta$

Q.45 If $a + b + c = 9$ and $ab + bc + ca = 23$, then $a^2 + b^2 + c^2 = ?$

- Ans**
- ✗ 1. 127
 - ✓ 2. 35
 - ✗ 3. 25
 - ✗ 4. 58

Q.46 Which of the following correctly represents the relationship between u (object distance), v (image distance) and f (focal length) of a spherical mirror?

- Ans**
- ✗ 1. $\frac{1}{v} + \frac{1}{u} = \frac{1}{2f}$
 - ✓ 2. $\frac{1}{v} + \frac{1}{u} = \frac{1}{f}$
 - ✗ 3. $\frac{1}{v} - \frac{1}{u} = \frac{1}{2f}$
 - ✗ 4. $\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$

Q.47 Divit starts from point A and drives 4 km towards the East. He then takes two simultaneous right turns and drives 2 km and 4 km, respectively. He takes another right turn and drives 5 km. He then takes a left turn and drives 3 km. He takes a final left turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ✓ 1. 3 km East
 - ✗ 2. 3 km West
 - ✗ 3. 3 km north
 - ✗ 4. 3 km South

Q.48 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All watches are perfumes.

No watch is a tie.

Conclusions:

(I) All perfumes are watches.

(II) No perfume is a tie.

- Ans**
- ✗ 1. Both conclusions I and II follow
 - ✓ 2. Neither conclusion I nor II follows
 - ✗ 3. Only conclusion I follows
 - ✗ 4. Only conclusion II follows

Q.49 Due to decrease in manpower, the production in a factory decreases by 25%. By what percentage should the working hours be increased to restore the original production?

- Ans**
- ☐ 1. 50%
 - ☐ 2. 25%
 - ☐ 3. $43\frac{6}{7}\%$
 - ☒ 4. $33\frac{1}{3}\%$

Q.50 18 boys and 24 girls can complete a piece of work in 16 days. All of them started working together but after 12 working days, all girls and 6 boys stopped working. 12 boys completed the remaining work in 9 days. How many days will it take to complete the entire job if only 24 girls have to complete the job?

- Ans**
- ☒ 1. 48 days
 - ☐ 2. 32 days
 - ☐ 3. 40 days
 - ☐ 4. 24 days

Q.51 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 7 2 5 5 2 1 9 2 4 1 2 2 6 9 5 5 5 3 8 5 5 3 1 1 6 3 3 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 3
 - ☒ 2. 2
 - ☐ 3. 1
 - ☐ 4. 0

Q.52 Which of the following represents the molecular formula for carbon monoxide?

- Ans**
- ☐ 1. CO_3
 - ☐ 2. CO_2
 - ☒ 3. CO
 - ☐ 4. C_2O

Q.53 Asexual reproduction does NOT involve the formation of _____.

- Ans**
- ☐ 1. spores
 - ☐ 2. leaves
 - ☐ 3. buds
 - ☒ 4. zygotes

Q.54 YTXS is related to QLPK in a certain way based on the English alphabetical order. In the same way, UPTO is related to MHLG. To which of the following options is RMQJ related, following the same logic ?

- Ans**
- ☐ 1. JEDI
 - ☒ 2. JEID
 - ☐ 3. EJID
 - ☐ 4. EJDI

Q.55 Methane, on burning with oxygen, gives which of the following products?

- Ans
- ☐ 1. Carbon monoxide only
 - ☒ 2. Carbon dioxide and water
 - ☐ 3. Carbonic acid
 - ☐ 4. Carbon monoxide and water

Q.56 Which of the options below represents the correct chemical formula of calcium hydroxide?

- Ans
- ☐ 1. NaOH
 - ☐ 2. $\text{Mg}(\text{OH})_2$
 - ☐ 3. KOH
 - ☒ 4. $\text{Ca}(\text{OH})_2$

Q.57 Nutrition is provided to the embryo from the mother's blood with the help of the:

- Ans
- ☐ 1. oviduct
 - ☐ 2. scrotum
 - ☒ 3. placenta
 - ☐ 4. ovary

Q.58 Which one of the following options is correctly paired according to their mode of action?

- Ans
- ☒ 1. Condom – Mechanical barrier
 - ☐ 2. Copper T – Hormonal imbalance
 - ☐ 3. Tubectomy – Chemical barrier
 - ☐ 4. Contraceptive pills – Uterine device

Q.59 Which of the following symbols were used by Bohr to represent different electron orbits in his atomic model?

- Ans
- ☐ 1. A, B, C, D, E....
 - ☐ 2. W, X, Y, Z, A....
 - ☐ 3. R, S T, U, V....
 - ☒ 4. K, L, M, N, O....

Q.60 A tank was filled with 300 ltr of water. During the day, 87 ltr 225 ml of water was used. How much water was left in the tank at the end of the day?

- Ans
- ☐ 1. 212 ltr 825 ml
 - ☐ 2. 212 ltr 875 ml
 - ☒ 3. 212 ltr 775 ml
 - ☐ 4. 212 ltr 675 ml

Q.61 Which of the following metals is most ductile?

- Ans
- ☐ 1. Lithium
 - ☒ 2. Gold
 - ☐ 3. Lead
 - ☐ 4. Sodium

Q.62 If a sum of money doubles itself in 10 years on compound interest, then in how many more years will it become 16 times of itself at the same rate of interest?

- Ans**
- ☐ 1. 40
 - ☐ 2. 20
 - ☐ 3. 10
 - ☒ 4. 30

Q.63 What is the filtration unit of the kidney?

- Ans**
- ☒ 1. Nephron
 - ☐ 2. Seminiferous tubule
 - ☐ 3. Neuron
 - ☐ 4. Sperm

Q.64 Which of the following is produced when carbon dioxide reacts with calcium hydroxide?

- Ans**
- ☐ 1. $\text{H}_2\text{CO}_3 + \text{H}_2\text{O}$
 - ☐ 2. $\text{CaO} + \text{H}_2\text{O}$
 - ☐ 3. $\text{CO} + \text{H}_2\text{O}$
 - ☒ 4. $\text{CaCO}_3 + \text{H}_2\text{O}$

Q.65 Find the greatest number by which when the numbers 57, 95 and 211 are divided, it leaves the same remainder in each case.

- Ans**
- ☐ 1. 3
 - ☐ 2. 4
 - ☒ 3. 2
 - ☐ 4. 1

Q.66 The ovule develops and gets converted into which of the following after fertilisation?

- Ans**
- ☐ 1. Sepal
 - ☐ 2. Anther
 - ☒ 3. Seed
 - ☐ 4. Fruit

Q.67 Project PARI is an initiative launched by which of the following organisations/Ministries to celebrate and enhance the public art scene in India?

- Ans**
- ☐ 1. Sahitya Akademi
 - ☒ 2. Union Ministry of Culture
 - ☐ 3. Lalit Kala Akademi
 - ☐ 4. Centre for Cultural Resources and Training (CCRT)

Q.68 If a current of 1 A is flowing through a conductor for 10 secs, then the charge flowing through it (in coulombs) will be:

- Ans**
- ☐ 1. 1
 - ☐ 2. 100
 - ☒ 3. 10
 - ☐ 4. 0.1

- Q.69** Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?
(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)
- Ans** ☒ 1. QTO
☒ 2. PSN
☒ 3. WZV
☒ 4. UXS
- Q.70** The effective resistance of the parallel combination of two resistors is always _____.
- Ans** ☒ 1. less than the resistance of the individual resistors
☒ 2. greater than the resistance of the individual resistors
☒ 3. equal to the product of resistance of the individual resistors
☒ 4. equal to the sum of the resistance of the resistors
- Q.71** Which gas is primarily produced during the burning of coke?
- Ans** ☒ 1. Nitrogen dioxide
☒ 2. Sulphur dioxide
☒ 3. Carbon dioxide
☒ 4. Oxygen
- Q.72** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?
GKF JNl MQL PTO ?
- Ans** ☒ 1. SWR
☒ 2. WSR
☒ 3. SRW
☒ 4. WRS
- Q.73** A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits fourth to the right of F. Only two people sit between A and Q. Only two people sit between R and Q. P sits to the immediate left of B. How many people sit between P and E when counted from the right of E?
- Ans** ☒ 1. Four
☒ 2. Three
☒ 3. One
☒ 4. Two
- Q.74** If $AB = k + 3$, $BC = 2k$ and $AC = 4k - 5$, then for what value of 'k' does B lie on AC?
- Ans** ☒ 1. 2
☒ 2. 8
☒ 3. 3
☒ 4. 5
- Q.75** The value of acceleration due to gravity 'g' is _____.
- Ans** ☒ 1. the same at the poles and equator
☒ 2. greater at the poles than at the equator
☒ 3. negative at the equator and positive at the poles
☒ 4. greater at the equator than at the poles

Q.76 Select the set in which the numbers are related in the same way as are the numbers of the following sets.
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)
(7, 28, 56)
(9, 36, 72)

- Ans**
- ☐ 1. (11, 52, 104)
 - ☐ 2. (13, 50, 104)
 - ☒ 3. (13, 52, 104)
 - ☐ 4. (13, 52, 94)

Q.77 At what temperature does water transform into steam under normal atmospheric pressure?

- Ans**
- ☐ 1. 50°C (122°F)
 - ☐ 2. 0°C (32°F)
 - ☐ 3. 80°C (176°F)
 - ☒ 4. 100°C (212°F)

Q.78 Genes that control the characteristics of a trait are located on:

- Ans**
- ☐ 1. endoplasmic reticulum
 - ☐ 2. lysosome
 - ☐ 3. vacuoles
 - ☒ 4. chromosomes

Q.79 Organisms whose cells lack a nuclear membrane are called _____.

- Ans**
- ☐ 1. cytoplasm
 - ☐ 2. chromatin
 - ☒ 3. prokaryotes
 - ☐ 4. eukaryotes

Q.80 Which of the following has two ends: one which is hydrophilic and the other which is hydrophobic?

- Ans**
- ☐ 1. Perfume
 - ☒ 2. Soap
 - ☐ 3. Water
 - ☐ 4. Cream

Q.81 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

Heavy rains and flash floods have inundated many low lying areas of City X.

Effects:

(I) The State Government has appointed a new head for the municipality of City X.

(II) The State Government has evacuated over 5500 people stranded in low lying areas of City X.

(III) Food and water is being distributed at multiple locations to help citizens who have been evacuated from City X.

- Ans**
- ☐ 1. Only I can be a possible effect
 - ☐ 2. Only II can be a possible effect
 - ☐ 3. Both I and II can be the possible effects
 - ☒ 4. Both II and III can be the possible effects

Q.82 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only A is kept above E. Only two boxes are kept between E and F. Only P is kept below M. B is not kept immediately above F. Which box is kept second above L?

- Ans**
- ☐ 1. A
 - ☒ 2. E
 - ☐ 3. F
 - ☐ 4. B

Q.83 Which of the following was NOT one of the nine priority areas of Union Budget 2024-25, aimed at generating ample opportunities for all?

- Ans**
- ☒ 1. Sustainable development of fisheries
 - ☐ 2. Manufacturing and services
 - ☐ 3. Employment and skilling
 - ☐ 4. Energy security

Q.84 If the volume of a cube is 512 cm^3 , then the measure of the main diagonal of the cube will be:

- Ans**
- ☐ 1. $7\sqrt{3} \text{ cm}$
 - ☒ 2. $8\sqrt{3} \text{ cm}$
 - ☐ 3. $17\sqrt{3} \text{ cm}$
 - ☐ 4. $14\sqrt{3} \text{ cm}$

Q.85 Two numbers are respectively 20% and 25% more than a third number. What percentage of the second number is the first number?

- Ans**
- ☒ 1. 96%
 - ☐ 2. 85%
 - ☐ 3. 80%
 - ☐ 4. 125%

Q.86 Which of the following options is the same as Newton's second law of motion?

- Ans**
- ☒ 1. If an object is in motion, applied force is directly proportional to the acceleration.
 - ☐ 2. The rate of change of momentum of an object is independent of the applied unbalanced force.
 - ☐ 3. An object at rest will remain at rest when external force is not applied.
 - ☐ 4. Applied force on a body is inversely proportional to the acceleration of the body.

Q.87 Nine men went to a restaurant. Eight of them spent ₹3 each on their meals and the ninth spent ₹2 more than the average expenditure of all the nine. Determine the total money spent by them.

- Ans**
- ☐ 1. ₹30.25
 - ☒ 2. ₹29.25
 - ☐ 3. ₹32
 - ☐ 4. ₹35

Q.88 If $y^3 = 0.008$, then the value of y^5 is:

- Ans**
- ☒ 1. 0.00032
 - ☐ 2. 0.0032
 - ☐ 3. 0.032
 - ☐ 4. 0.000032

Q.89 Match the hormones with their respective functions.

Hormones	Functions
1. Thyroxin	a. Control body's growth and development
2. Growth hormone	b. Male sex organ development
3. Testosterone	c. Controls the level of blood sugar in the body
4. Insulin	d. Controls the body's metabolism of fat, protein and carbohydrates.

- Ans**
- ☒ 1. 1-b, 2-a, 3-d, 4-c
 - ☒ 2. 1-d, 2-a, 3-b, 4-c
 - ☒ 3. 1-d, 2-b, 3-c, 4-a
 - ☒ 4. 1-a, 2-c, 3-b, 4-d

Q.90 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?
 $24 \times 6 \div 3 - 11 + 13 = ?$

- Ans**
- ☒ 1. 10
 - ☒ 2. 8
 - ☒ 3. 9
 - ☒ 4. 12

Q.91 Study the table given below and answer the question. The table shows the sale and profits of Company X.

Year	Sale (in cr)	Profits (in cr)
2019	20	2
2020	25	4
2021	30	6
2022	32	6.5
2023	34	7

What were the profits as a percentage of sale in 2021?

- Ans**
- ☒ 1. 20%
 - ☒ 2. 25%
 - ☒ 3. 15%
 - ☒ 4. 10%

Q.92 Who was appointed as the Head Coach of the Indian men's cricket team in July 2024?

- Ans**
- ☒ 1. VVS Laxman
 - ☒ 2. Gautam Gambhir
 - ☒ 3. Rahul Dravid
 - ☒ 4. MS Dhoni

Q.93 Express the speed of 36 km/h in m/s.

- Ans**
- ☒ 1. 78 m/s
 - ☒ 2. 11 m/s
 - ☒ 3. 60 m/s
 - ☒ 4. 10 m/s

Q.94 In 2024, what major upgrade did the Indian Air Force (IAF) focus on to enhance its defense capabilities?

- Ans**
- ☐ 1. Expansion of the cyber defense unit
 - ☐ 2. Development of indigenously produced submarines
 - ☒ 3. Upgrading the Sukhoi-30MKI fleet with new avionics
 - ☐ 4. Acquisition of advanced drones for surveillance

Q.95 A spherical mirror, whose reflecting surface faces towards the centre of the sphere, is called a _____.

- Ans**
- ☒ 1. concave mirror
 - ☐ 2. plano-convex mirror
 - ☐ 3. plane mirror
 - ☐ 4. convex mirror

Q.96 Which of the following shows Tyndall effect?

- Ans**
- ☐ 1. Solutions
 - ☐ 2. Metals
 - ☐ 3. Gases
 - ☒ 4. Colloids

Q.97 At what rate (in percentage) per annum will ₹1,300 give ₹650 as simple interest in 10 years?

- Ans**
- ☐ 1. 7%
 - ☐ 2. 4%
 - ☒ 3. 5%
 - ☐ 4. 8%

Q.98 Find the area of a rhombus whose side is 25 cm and one of the diagonals is 30 cm?

- Ans**
- ☐ 1. 720 sq cm
 - ☒ 2. 600 sq cm
 - ☐ 3. 225 sq cm
 - ☐ 4. 360 sq cm

Q.99 The sum of the first five prime numbers is:

- Ans**
- ☐ 1. 29
 - ☐ 2. 27
 - ☐ 3. 26
 - ☒ 4. 28

Q.100 A negative sign in magnification of spherical mirrors indicates that the _____.

- Ans**
- ☐ 1. image is enlarged
 - ☐ 2. image is virtual
 - ☒ 3. image is real
 - ☐ 4. image is diminished



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	TCS Gito Bitan
Test Date	29/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The mean proportional between two numbers is given as the positive square root of the product of those two numbers. If 72 is the mean proportional between 18 and y, then the value of y is:

- Ans**
- ☒ 1. 388
 - ☒ 2. 588
 - ☒ 3. 288
 - ☒ 4. 488

Q.2 Convex mirrors are fitted on the sides of vehicles because they always give _____.

- Ans**
- ☒ 1. an erect and diminished image
 - ☒ 2. a narrower field of the view
 - ☒ 3. an erect and an enlarged image
 - ☒ 4. a real image

Q.3 In a certain code language,
'P + Q' means 'P is the father of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the brother of Q' and
'P ÷ Q' means 'P is the sister of Q'.

How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☒ 1. Mother's brother
 - ☒ 2. Father's brother
 - ☒ 3. Mother's father
 - ☒ 4. Father's father

Q.4 Gastric glands present in the wall of the stomach do NOT release:

- Ans**
- ☐ 1. mucus
 - ☒ 2. saliva
 - ☐ 3. pepsin
 - ☐ 4. hydrochloric acid

Q.5 Express the speed of 25 m/s in km/h.

- Ans**
- ☐ 1. 50 km/h
 - ☐ 2. 99 km/h
 - ☒ 3. 90 km/h
 - ☐ 4. 15 km/h

Q.6 The value of $[(10)^{150} \div (10)^{146}]$ is:

- Ans**
- ☐ 1. 1000
 - ☐ 2. 10^5
 - ☐ 3. 10^6
 - ☒ 4. 10000

Q.7 The value of a machine depreciates at the rate of 10% per annum. If its present value is ₹1,62,000, then what was the value of the machine 2 years ago?

- Ans**
- ☐ 1. ₹1,90,000
 - ☐ 2. ₹2,04,000
 - ☐ 3. ₹1,86,000
 - ☒ 4. ₹2,00,000

Q.8 What was India's rank out of 127 countries in the 2024 Global Hunger Index released in October 2024?

- Ans**
- ☐ 1. 111
 - ☐ 2. 97
 - ☐ 3. 99
 - ☒ 4. 105

Q.9 

- Ans**
- ☐ 1. 4
 - ☒ 2. 1
 - ☐ 3. 3
 - ☐ 4. 0

Q.10 The cost of 2 tables and 3 chairs is ₹540, while that of 2 tables and 1 chair is ₹470. What is the cost of 35 chairs?

- Ans**
- ☒ 1. ₹1,225
 - ☐ 2. ₹1,245
 - ☐ 3. ₹1,205
 - ☐ 4. ₹1,185

Q.11 If $x + \frac{1}{x} = 6$, then $x^2 + \frac{1}{x^2} = ?$

- Ans
- ☐ 1. 38
 - ☒ 2. 34
 - ☐ 3. 32
 - ☐ 4. 36

Q.12 Which of the following is produced when acid reacts with metals?

- Ans
- ☐ 1. Only Salt
 - ☐ 2. Only Hydrogen gas
 - ☐ 3. Salt and water
 - ☒ 4. Salt and hydrogen gas

Q.13 24-carat gold is called _____.

- Ans
- ☐ 1. impure gold
 - ☐ 2. wrought gold
 - ☐ 3. spongy gold
 - ☒ 4. pure gold

Q.14 নিম্নে প্রদত্ত কোন সংখ্যা জোড়ার দুটি সংখ্যার কোনোটিই মৌলিক সংখ্যা নয়, তবে দুটি সংখ্যাই সহ-মৌলিক সংখ্যা?

- Ans
- ☐ 1. (11, 17)
 - ☐ 2. (19, 27)
 - ☐ 3. (21, 35)
 - ☒ 4. (8, 25)

Q.15 Study the following table and answer the question.

Number of candidates appeared and qualified in a competitive examination from different states over the years.

State	Year			
	2020		2021	
	Appeared	Qualified	Appeared	Qualified
A	500	100	600	150
B	600	200	800	250
C	400	50	500	100
D	300	60	400	80

For which state did the percentage of students qualified did NOT change from 2020 to 2021?

- Ans
- ☐ 1. A
 - ☒ 2. D
 - ☐ 3. B
 - ☐ 4. C

Q.16 In January 2024, what significant milestone did the Indian Air Force (IAF) achieve in terms of landing operations?

- Ans
- ☐ 1. First operation of a C-130J Super Hercules at the world's highest airstrip
 - ☐ 2. First deployment of the Garud Special Forces using a C-130J Super Hercules
 - ☐ 3. First landing of a C-130J Super Hercules aircraft at Daulat Beg Oldie
 - ☒ 4. First successful night landing at the Kargil airfield with a C-130J Super Hercules

Q.17 The number of prime numbers lying between 400 and 430 is:

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 5
 - ☐ 4. 6

Q.18 Honey is produced by the honeybee. So, the honeybee is a _____.

- Ans**
- ☐ 1. producer
 - ☒ 2. primary consumer
 - ☐ 3. Decomposer
 - ☐ 4. secondary consumer

Q.19 Which of the following statements is correct?

- Ans**
- ☐ 1. At maturity, the reproductive tissue stops to mature in humans.
 - ☐ 2. At maturity, the rate of general body growth in humans begins to get faster.
 - ☐ 3. In sexual mode of reproduction, germ-cells from one individual have to join together.
 - ☒ 4. At maturity, the rate of general body growth in humans begins to slow down.

Q.20 Manju ranked 17th from the bottom and 8th from the top in his class. How many students are there in his class?

- Ans**
- ☒ 1. 24
 - ☐ 2. 23
 - ☐ 3. 25
 - ☐ 4. 22

Q.21 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. JNK
 - ☐ 2. EIF
 - ☐ 3. OSP
 - ☒ 4. TXV

Q.22 Which of the following statements about the reaction of a non-metallic oxide with a base is/are correct?

Statement I: The reaction of non-metallic oxide with base produces salt and water.

Statement II: Non-metallic oxides are acidic in nature.

- Ans**
- ☐ 1. Only statement II is correct.
 - ☒ 2. Both statements I and II are correct.
 - ☐ 3. Only statement I is correct.
 - ☐ 4. Neither statement I nor II is correct.

Q.23 Rani has borrowed an amount of ₹2,00,000 from a bank to start a business. How much simple interest will she pay at a rate of 7% per annum after 2 years?

- Ans**
- ☐ 1. ₹26,000
 - ☐ 2. ₹28,500
 - ☐ 3. ₹24,000
 - ☒ 4. ₹28,000

Q.24 The HCF of 240, 360 and 480 is:

- Ans**
- ☒ 1. 120
 - ☐ 2. 160
 - ☐ 3. 480
 - ☐ 4. 360

Q.25 In a certain code language, 'WHELP' is coded as '24681' and 'HELPS' is coded as '12674'. What is the code for 'W' in the given code language?

- Ans**
- ☐ 1. 1
 - ☐ 2. 2
 - ☒ 3. 8
 - ☐ 4. 4

Q.26 In how many years will a sum of ₹12,000 become ₹14,520 at a rate of 10% per annum on compound interest, compounded annually?

- Ans**
- ☐ 1. 4
 - ☒ 2. 2
 - ☐ 3. 5
 - ☐ 4. 3

Q.27 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 5 % 4 6 @ 8 S 7 & 3 Ω 9 2 % # 1 * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an odd number and also immediately followed by an odd number?

- Ans**
- ☐ 1. One
 - ☒ 2. Two
 - ☐ 3. More than two
 - ☐ 4. None

Q.28 Different cell organelles such as mitochondria, ribosome, etc., together constitute the basic unit of life called the:

- Ans**
- ☐ 1. organ system
 - ☐ 2. organ
 - ☒ 3. cell
 - ☐ 4. tissue

Q.29 The average of the eight numbers is 72. Find the least number if it is $\frac{1}{16}$ of the sum of the numbers.

- Ans**
- ☐ 1. 16
 - ☐ 2. 28
 - ☒ 3. 36
 - ☐ 4. 18

Q.30 50 men took a dip in a water tank 40 m long and 20 m broad on a religious day. If the average displacement of water by a man is 4 m³, then the rise in the water level in the tank will be:

- Ans**
- ☒ 1. 20 cm
 - ☒ 2. 25 cm
 - ☒ 3. 35 cm
 - ☒ 4. 50 cm

Q.31 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two reasons explain(s) the event/observation/information given in the statement.

Statement:

Many trains on the Arakkonam–Chennai route are running several hours late today.

Reasons:

(I) Railways has decided to run two holiday special trains between Kolkata and Patna from November to December 2023.

(II) A major train accident occurred at Arakkonam Junction last night, where seven bogies of an express train derailed and fell across the tracks.

- Ans**
- ☒ 1. Only II is a possible reason
 - ☒ 2. Neither I nor II is a possible reason
 - ☒ 3. Both I and II are possible reasons
 - ☒ 4. Only I is a possible reason

Q.32 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 99?

- Ans**
- ☒ 1. 28 A 39 D 3 B 12 C 7
 - ☒ 2. 28 C 39 B 3 D 12 A 7
 - ☒ 3. 28 D 39 A 3 C 12 B 7
 - ☒ 4. 28 B 39 C 3 A 12 D 7

Q.33 The Union Finance Minister, on 9 November 2024, inaugurated Nari Shakti Branches of which of the following banks in Bengaluru, Chennai, Visakhapatnam, and Jaipur?

- Ans**
- ☒ 1. Bank of Baroda
 - ☒ 2. Union Bank of India
 - ☒ 3. Canara Bank
 - ☒ 4. State Bank of India

Q.34 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All villas are buildings.

Some buildings are apartments.

Conclusions:

(I) All buildings are villas.

(II) Some villas are not apartments.

- Ans**
- ☒ 1. Only conclusion II follows
 - ☒ 2. Both conclusions I and II follow
 - ☒ 3. Only conclusion I follows
 - ☒ 4. Neither conclusion I nor II follows

Q.35 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☐ 1. TY – VA
 - ☒ 2. XB – YC
 - ☐ 3. BG – DI
 - ☐ 4. DI – FK

Q.36 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ACY, MOK, YAW, KMI, ?

- Ans**
- ☐ 1. WZU
 - ☒ 2. WYU
 - ☐ 3. WZV
 - ☐ 4. WYV

Q.37 If the mass of a football is 3 kg, then what would be its weight on the earth? (Given, $g = 9.8 \text{ m s}^{-2}$)

- Ans**
- ☐ 1. 25 N
 - ☐ 2. 35 N
 - ☐ 3. 30.5 N
 - ☒ 4. 29.4 N

Q.38 If an object is placed in front of a concave mirror at a distance of 20 cm and the image is formed on the same side at a distance of 40 cm, then the magnification of the mirror will be:

- Ans**
- ☒ 1. -2.0
 - ☐ 2. +0.4
 - ☐ 3. +2.0
 - ☐ 4. -0.4

Q.39 If the focal length of a lens is -25 cm, the power of the lens will be:

- Ans**
- ☐ 1. -0.04 D
 - ☒ 2. -4 D
 - ☐ 3. +4 D
 - ☐ 4. +0.04 D

Q.40 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All oil is paint.

All paint is brush.

Conclusions:

(I) Some brushes are oil.

(II) No brush is oil.

- Ans**
- ☐ 1. Only conclusion (II) follows
 - ☐ 2. Both conclusions (I) and (II) follow
 - ☐ 3. Neither conclusion (I) nor (II) follows
 - ☒ 4. Only conclusion (I) follows

Q.41 Besides products of photosynthesis, which of the following substances are transported by the phloem in plants?

- Ans**
- ☐ 1. Only Sucrose
 - ☒ 2. Both amino acids and sucrose
 - ☐ 3. Only Amino acids
 - ☐ 4. Only Water

Q.42 Which of the following metals reacts with cold water?

- Ans**
- ☒ 1. Sodium
 - ☐ 2. Aluminium
 - ☐ 3. Zinc
 - ☐ 4. Iron

Q.43 TQSO is related to MLH in a certain way based on the English alphabetical order. In the same way, VSUQ is related to OLNJ. To which of the following options is ROQM related, following the same logic ?

- Ans**
- ☐ 1. HKFJ
 - ☐ 2. KHFJ
 - ☐ 3. HKJF
 - ☒ 4. KHJF

Q.44 Who among the following was appointed Indian men's cricket team's full time T20 international captain in July 2024?

- Ans**
- ☐ 1. Hardik Pandya
 - ☒ 2. Suryakumar Yadav
 - ☐ 3. Ravindra Jadeja
 - ☐ 4. Shubman Gill

Q.45 Protein digesting enzyme pepsin is secreted in the:

- Ans**
- ☐ 1. mouth
 - ☐ 2. duodenum
 - ☒ 3. stomach
 - ☐ 4. ileum

Q.46 When a more reactive metal is placed in a salt solution containing a less reactive metal, it replaces the less reactive metal. This reaction is known as _____.

- Ans**
- ☒ 1. Displacement reaction
 - ☐ 2. Neutralisation reaction
 - ☐ 3. Decomposition reaction
 - ☐ 4. Combination reaction

Q.47 The upward and downward growth of a plant is due to which of the following tropisms?

- Ans**
- ☐ 1. Chemotropism
 - ☐ 2. Phototropism
 - ☒ 3. Geotropism
 - ☐ 4. Hydrotropism

Q.48 Which of the following is NOT a property of a colloid?

- Ans**
- ☐ 1. Particles of colloids do not settle down when left undisturbed.
 - ☐ 2. Colloid is a heterogeneous mixture.
 - ☐ 3. Colloids cannot be separated by filtration.
 - ☒ 4. Colloid is a homogeneous mixture.

Q.49 A pipe can fill a tank in 12 hours. Another pipe can empty the filled tank in 28 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☐ 1. 28
 - ☒ 2. 7
 - ☐ 3. 21
 - ☐ 4. 14

Q.50 In a circuit, suppose the three resistors having the values $5\ \Omega$, $10\ \Omega$, $20\ \Omega$ are connected in parallel; then equivalent resistance of the circuit will be _____.

- Ans**
- ☐ 1. $35\ \Omega$
 - ☒ 2. $\frac{20}{7}\ \Omega$
 - ☐ 3. $20\ \Omega$
 - ☐ 4. $\frac{40}{7}\ \Omega$

Q.51 If the power of a lens is +1 Dioptre, then the focal length of the lens will be:

- Ans**
- ☐ 1. 0.5 m
 - ☒ 2. 1 m
 - ☐ 3. 0.75 m
 - ☐ 4. 0.25 m

Q.52 A body of mass m and a body of mass $4m$ are dropped from the same height, the ratio of the time taken by the two bodies to reach the ground would be:

(Air resistance is neglected)

- Ans**
- ☐ 1. 4:1
 - ☒ 2. 1:1
 - ☐ 3. 1:4
 - ☐ 4. 1:2

Q.53 Which of the following is NOT a sign of sexual maturity in girls?

- Ans**
- ☒ 1. Cracking of voice
 - ☐ 2. Oily skin
 - ☐ 3. Increase in breast size
 - ☐ 4. Menstruation

Q.54 If F_1 force is required to accelerate an object of 5 kg mass at 10 m s^{-2} and F_2 force to accelerate an object of 10 kg mass at 12 m s^{-2} , then which of the following statements is true?

- Ans**
- ✓ 1. $F_2 > F_1$
 - ✗ 2. $F_2 = -2 \times F_1$
 - ✗ 3. $F_1 = F_2$
 - ✗ 4. $F_1 > F_2$

Q.55 How much prize money was announced by the BCCI for the men's T20 cricket World Cup 2024 winner team?

- Ans**
- ✓ 1. ₹125 crore
 - ✗ 2. ₹100 crore
 - ✗ 3. ₹150 crore
 - ✗ 4. ₹50 crore

Q.56 The kinetic energy of a moving body of mass 'm' and velocity 'v' is _____.

- Ans**
- ✗ 1. inversely proportional to its mass and square of its velocity
 - ✗ 2. directly proportional to its mass but inversely proportional to its velocity
 - ✓ 3. directly proportional to its mass and square of its velocity
 - ✗ 4. directly proportional to its velocity but inversely proportional to its mass

Q.57 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

153, 17

216, 24

- Ans**
- ✗ 1. 171, 18
 - ✗ 2. 225, 35
 - ✓ 3. 243, 27
 - ✗ 4. 189, 31

Q.58 Which of the following products is NOT formed when electricity is passed through an aqueous solution of sodium chloride?

- Ans**
- ✗ 1. Hydrogen gas
 - ✗ 2. Chlorine gas
 - ✗ 3. Sodium hydroxide
 - ✓ 4. Oxygen gas

Q.59 Who among the following has been appointed as the chairperson of the Lokpal in February 2024?

- Ans**
- ✗ 1. Justice Suresh Kumar Kait
 - ✗ 2. Justice Manmohan
 - ✓ 3. Justice Ajay Manikrao Khanwilkar
 - ✗ 4. Justice Rajiv Shaktiher

Q.60 Match the class of organic compounds (Column I) with the suffix used (Column II).

	Column I		Column II
(i)	Ketone	(a)	-al (-CHO)
(ii)	Alkene	(b)	-one (-C=O)
(iii)	Aldehyde	(c)	-ene (-C=C-)
(iv)	Carboxylic acid	(d)	-oic acid (-COOH)

- Ans**
- ✓ 1. (i)-(b); (ii)-(c); (iii)-(a); (iv)-(d)
 - ✗ 2. (i)-(c); (ii)-(b); (iii)-(a); (iv)-(d)
 - ✗ 3. (i)-(b); (ii)-(c); (iii)-(d); (iv)-(a)
 - ✗ 4. (i)-(c); (ii)-(d); (iii)-(b); (iv)-(a)

Q.61 Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. Only three people sit between B and L. C sits to the immediate left of L. No one sits to the right of Y. Only two people sit between Y and C. Z sits to the immediate right of A. How many people sit between X and Z?

- Ans**
- ✗ 1. Three
 - ✓ 2. Two
 - ✗ 3. Four
 - ✗ 4. One

Q.62 What will come in the place of '?' in the following equation, if '+' and '×' are interchanged and '×' and '-' are interchanged?
 $27 + 14 \times 21 + 3 - 4 = ?$

- Ans**
- ✗ 1. 10
 - ✓ 2. 13
 - ✗ 3. 15
 - ✗ 4. 16

Q.63 Which of the following statements is true?

- Ans**
- ✗ 1. The weight of an object is the power with which it is attracted towards the earth.
 - ✗ 2. The weight of an object is constant and does not change from place to place.
 - ✓ 3. The mass of an object is constant and does not change from place to place.
 - ✗ 4. The weight is equal to the product of velocity and acceleration due to gravity.

Q.64 What is the process by which autotrophs take in substance from outside and in the presence of sunlight, convert them into stored forms of energy?

- Ans**
- ✓ 1. Photosynthesis
 - ✗ 2. Digestion
 - ✗ 3. Movement
 - ✗ 4. Circulation

Q.65 A single discount equivalent to successive discounts of 40% and 20% is:

- Ans**
- ✗ 1. 55%
 - ✗ 2. 50%
 - ✓ 3. 52%
 - ✗ 4. 60%

Q.66 MPLO is related to RUQT in a certain way based on the English alphabetical order. In the same way, ILHK is related to NQMP. To which of the following options is FIEH related, following the same logic?

- Ans**
- ☒ 1. KNJM
 - ☐ 2. NKJM
 - ☐ 3. KNMJ
 - ☐ 4. NKMJ

Q.67 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

DJC, YEX, TZS, OUN, ?

- Ans**
- ☐ 1. JPM
 - ☐ 2. JRM
 - ☒ 3. JPI
 - ☐ 4. JRI

Q.68 A dentist usually uses:

- Ans**
- ☐ 1. a plane mirror
 - ☒ 2. a concave mirror
 - ☐ 3. a convex mirror
 - ☐ 4. a plano-convex mirror

Q.69 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(4, 12, 48)

(7, 21, 84)

- Ans**
- ☐ 1. (15, 25, 180)
 - ☐ 2. (15, 45, 170)
 - ☒ 3. (15, 45, 180)
 - ☐ 4. (5, 45, 180)

Q.70 Sodium or potassium salt of long chain carboxylic acid is known as which of the following?

- Ans**
- ☒ 1. Soap
 - ☐ 2. Detergent
 - ☐ 3. Micelle
 - ☐ 4. Both detergent and soap

Q.71 All activities inside the cell and interactions of the cell with its environment are possible due to three important features observed in almost every cell. Which are the three features?

- Ans**
- ☒ 1. Plasma membrane, nucleus and cytoplasm
 - ☐ 2. Mitochondria, nucleus and cytoplasm
 - ☐ 3. Mitochondria, nucleus and Golgi apparatus
 - ☐ 4. Plasma membrane, nucleus and Golgi apparatus

Q.72 Which team of Indian Space Research Organisation (ISRO) won the Vigyan Team award in 2024?

- Ans**
- ☐ 1. Aditya-L1 Team
 - ☒ 2. Chandrayaan-3 Team
 - ☐ 3. XPoSat Team
 - ☐ 4. Chandrayaan-2 Team

Q.73 Using the empirical relation between the mean, median and mode, find the value of the mode if the median is 30 and mean is 25.

- Ans**
- ☐ 1. 60
 - ☒ 2. 40
 - ☐ 3. 50
 - ☐ 4. 30

Q.74 Which of the following statements is/are correct?

- A) Zinc and lead are more reactive elements than copper.
- B) Zinc and lead are less reactive elements than copper.
- C) An iron nail become yellow in colour when it is dipped in the copper sulphate solutions.

- Ans**
- ☐ 1. Only A and B
 - ☒ 2. Only A
 - ☐ 3. Only C
 - ☐ 4. Only A and C

Q.75 If 50 is subtracted from 60% of a number, then the result is 40. 60% of the same number is:

- Ans**
- ☐ 1. 150
 - ☐ 2. 120
 - ☒ 3. 90
 - ☐ 4. 60

Q.76 Read the given statements and select the correct option.

Statement I: Sarvepalli Radhakrishnan and C Rajagopalachari were the first recipients of the Bharat Ratna.

Statements II: Sachin Tendulkar was the first and only cricketer awarded with Bharat Ratna till 2024.

- Ans**
- ☒ 1. Both statement I and statement II are correct.
 - ☐ 2. Both statement I and statement II are incorrect.
 - ☐ 3. Statement I is correct, while statement II is incorrect.
 - ☐ 4. Statement I is incorrect, while statement II is correct.

Q.77 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

194, 249, 199, 244, 204, ?

- Ans**
- ☐ 1. 234
 - ☐ 2. 224
 - ☒ 3. 239
 - ☐ 4. 219

Q.78 Which of the following methods is used for refining impure metals?

- Ans**
- ☐ 1. Galvanisation
 - ☒ 2. Electrolytic refining
 - ☐ 3. Oiling
 - ☐ 4. Painting

Q.79 Which of the following is NOT a role played by NITI Aayog in the localisation of SDGs in India?

- Ans**
- ☐ 1. Fostering competitive federalism among states and UTs
 - ☐ 2. Benchmarking states based on SDG performance metrics
 - ☐ 3. Serving as a platform for collaboration among states
 - ☒ 4. Preparing the National Indicator Framework (NIF)

Q.80 If each vowel in the word ARTICULATE is changed to the letter immediately following it in the English alphabetical order and each consonant is changed to the letter immediately preceding it in the English alphabetical order, then which of the following letters will appear more than twice in the group of letters thus formed?

- Ans**
- ☐ 1. J
 - ☐ 2. S
 - ☐ 3. K
 - ☒ 4. B

Q.81 In a certain code language, 'FIRE' is coded as '3718' and 'FARE' is coded as '1438'. What is the code for 'A' in the given code language?

- Ans**
- ☐ 1. 1
 - ☐ 2. 8
 - ☐ 3. 3
 - ☒ 4. 4

Q.82 ₹ 2,000 is divided between A and B such that half of A's part and one-third of B's part are equal. What is B's part (in ₹)?

- Ans**
- ☐ 1. 800
 - ☐ 2. 1,000
 - ☐ 3. 600
 - ☒ 4. 1,200

Q.83 Carbon has the unique ability to form bonds with other atoms of carbon, giving rise to large molecules. This property is called _____.

- Ans**
- ☒ 1. Catenation
 - ☐ 2. Metallic bonding
 - ☐ 3. Cyclisation
 - ☐ 4. Polymerisation

Q.84 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group ?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. ELH
 - ☒ 2. LSP
 - ☐ 3. CJF
 - ☐ 4. IPL

Q.85 A, B, C alone can do a piece of work in 9, 12 and 18 days, respectively. They all started the work together, but A left after 3 days. In how many days was the remaining work completed?

- Ans**
- ☐ 1. $\frac{11}{4}$
 - ☐ 2. 2
 - ☐ 3. $\frac{5}{2}$
 - ☒ 4. $\frac{9}{5}$

Q.86 What is the energy currency for most cellular processes?

- Ans**
- ☐ 1. DNA
 - ☐ 2. RNA
 - ☒ 3. ATP
 - ☐ 4. NAD

Q.87 The area (in cm^2) of an equilateral triangle whose altitude from vertex is 12 cm, is:

- Ans**
- ☐ 1. $27\sqrt{3}$
 - ☐ 2. $\frac{9\sqrt{3}}{4}$
 - ☒ 3. $48\sqrt{3}$
 - ☐ 4. $\frac{9\sqrt{3}}{2}$

Q.88 To promote the dialogue of traditions, national values and cultures, India participated in the BRICS Literature Forum 2024 in ____.

- Ans**
- ☐ 1. China
 - ☒ 2. Russia
 - ☐ 3. Bhutan
 - ☐ 4. Nepal

Q.89 Gas to liquid and liquid to solid conversion is:

- Ans**
- ☐ 1. fusion and vaporisation respectively
 - ☐ 2. solidification and condensation respectively
 - ☒ 3. condensation and solidification respectively
 - ☐ 4. sublimation and fusion respectively

Q.90 If the area of an equilateral triangle is $16\sqrt{3}$ sq cm, then the length of each side of the triangle is:

- Ans**
- ☐ 1. 10 cm
 - ☒ 2. 8 cm
 - ☐ 3. 5 cm
 - ☐ 4. 12 cm

Q.91 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. Only three people sit between R and E when counted from the left of R. Only two people sit between E and Q. B sits third to the right of Q. F sits to the immediate left of P. Who sits to the immediate right of A?

- Ans**
- ☒ 1. R
 - ☒ 2. E
 - ☒ 3. Q
 - ☒ 4. B

Q.92 Who among the following scientists was the first to use a glass prism to discover the spectrum of sunlight?

- Ans**
- ☒ 1. Albert Einstein
 - ☒ 2. Archimedes
 - ☒ 3. Sir Isaac Newton
 - ☒ 4. Prof CV Raman

Q.93 A father's age is seven times that of his son's age. Three years from now, the age of the father will be five times that of his son's age. After how many years will their combined age be 58 years?

- Ans**
- ☒ 1. 4 years
 - ☒ 2. 2 years
 - ☒ 3. 6 years
 - ☒ 4. 5 years

Q.94 A dishonest shopkeeper pretends to sell his goods at cost price, but uses a false weights and gains $11\frac{1}{9}\%$. For a weight of a kg, he uses:

- Ans**
- ☒ 1. 900 gm weight
 - ☒ 2. 875 gm weight
 - ☒ 3. 950 gm weight
 - ☒ 4. 850 gm weight

Q.95 একজন কুলি মাটি থেকে 10 kg ওজনের একটি লাগেজ তুলে মাটি থেকে 1m উপরে তার মাথায় রাখে। তাহলে ওই লাগেজের উপর তার দ্বারা করা কার্যটি (অভিকর্ষজ ত্বরণের SI ইউনিট হল g) কত?

- Ans**
- ☒ 1. 15g J
 - ☒ 2. 10g J
 - ☒ 3. 18g J
 - ☒ 4. 20g J

Q.96 The rigid outer covering present outside the plasma membrane in plants is called the:

- Ans**
- ☒ 1. cell wall
 - ☒ 2. selectively permeable membrane
 - ☒ 3. nuclear membrane
 - ☒ 4. cell envelope

Q.97 The value of $\frac{\sin^2 48^\circ + \sin^2 42^\circ}{\tan^2 40^\circ - \operatorname{cosec}^2 50^\circ}$ is:

- Ans**
- ☒ 1. 2
 - ☒ 2. 1
 - ☒ 3. 0
 - ☒ 4. -1

Q.98 In an ecosystem, physical factors like temperature, rainfall, wind, soil and minerals are:

- Ans**
- ☐ 1. decomposers
 - ☒ 2. abiotic components
 - ☐ 3. biotic components
 - ☐ 4. living components

Q.99 Evaluate the given expression.

$$(-18) + 6 \div 3 + 5$$

- Ans**
- ☐ 1. 1
 - ☐ 2. -1
 - ☐ 3. 11
 - ☒ 4. -11

Q.100 Select the correct statement related to the characteristics of prokaryotic cell.

- Ans**
- ☐ 1. Nuclear region is well defined and surrounded by nuclear membrane.
 - ☐ 2. It has more than one chromosome.
 - ☐ 3. Membrane bound cell organelles are present.
 - ☒ 4. It has a single chromosome.

2024/12/30-09:34:33



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Zoo Park Tirupathi
Test Date	29/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following is a function of epithelial tissues?

- Ans
- ☒ 1. Provides response to stimulus
 - ☒ 2. Storage of fats
 - ☒ 3. Protection
 - ☒ 4. Responsible for involuntary movements

Q.2 _____ causes the stem or root to enlarge in diameter.

- Ans
- ☒ 1. Cambium
 - ☒ 2. Underneath meristem
 - ☒ 3. Apical meristem
 - ☒ 4. Intercalary meristem

Q.3 Rajiv starts from point A and drives 2 km towards the West. He then takes a right turn and drives 1 km. He then takes a left turn and drives 3 km. He takes another left turn and drives 1 km. He then takes a final left turn and drives 4 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans
- ☒ 1. 1 km North
 - ☒ 2. 1 km West
 - ☒ 3. 1 km South
 - ☒ 4. 1 km East

Q.4 Find the arithmetic mean of the given frequency distribution.

Marks	Frequency
50	3
28	4
85	6
40	7

- Ans
- ☐ 1. 40.95
 - ☐ 2. 50.5
 - ☒ 3. 52.6
 - ☐ 4. 56.2

Q.5 The laws of reflection are applicable to _____.

- Ans
- ☐ 1. only to plane surfaces and not to spherical surfaces
 - ☐ 2. neither plane surfaces nor spherical surfaces
 - ☐ 3. only to spherical surface and not to plane surfaces
 - ☒ 4. both plane and spherical surfaces

Q.6 Which of the following metals is least reactive with acids?

- Ans
- ☐ 1. Zinc
 - ☒ 2. Copper
 - ☐ 3. Iron
 - ☐ 4. Aluminium

Q.7 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 7 & 3 Ω 9 5 & 4 6 @ 8 S # 1 * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an even number and also immediately followed by an odd number?

- Ans
- ☐ 1. More than two
 - ☐ 2. One
 - ☐ 3. Two
 - ☒ 4. None

Q.8 The contraction and relaxation of which of the following results in movement of the organ?

- Ans
- ☐ 1. Bones
 - ☐ 2. Nerve cells
 - ☒ 3. Muscle cells
 - ☐ 4. Cartilages

Q.9 Identify the gas that is evolved when magnesium and manganese react with nitric acid.

- Ans
- ☐ 1. Helium gas
 - ☐ 2. Nitrogen gas
 - ☒ 3. Hydrogen gas
 - ☐ 4. Oxygen gas

Q.10 The list price of a washing machine is ₹13,200. It is sold to a retailer after a 20% discount. What is the cost price of the washing machine to the retailer?

- Ans**
- ☐ 1. ₹11,660
 - ☒ 2. ₹10,560
 - ☐ 3. ₹10,660
 - ☐ 4. ₹11,560

Q.11 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

GJN ILP KNR MPT ?

- Ans**
- ☒ 1. ORV
 - ☐ 2. ROV
 - ☐ 3. OVR
 - ☐ 4. RVO

Q.12 The ratio of the present ages of Manmohan and his wife Manpreet is 7 : 6. After 6 years, the ratio of their ages will be 8 : 7. If at the time of marriage, the ratio of their ages was 4 : 3, then how many years ago from now did they get married?

- Ans**
- ☐ 1. 16 years
 - ☐ 2. 15 years
 - ☐ 3. 13 years
 - ☒ 4. 18 years

Q.13 When did the National Human Rights Commission (NHRC) issue an advisory to the Centre, the states and UT administrations to ensure widows' welfare and the protection of their human rights, including the establishment of a 'widows' cell' in each district?

- Ans**
- ☒ 1. June 2024
 - ☐ 2. April 2024
 - ☐ 3. August 2024
 - ☐ 4. May 2024

Q.14 Which of the following statements is NOT true regarding the particles of matter?

- Ans**
- ☐ 1. They are moving constantly.
 - ☐ 2. They are very small.
 - ☐ 3. They attract each other.
 - ☒ 4. They do not have spaces in between them.

Q.15 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.
(Left) & % 4 6 @ 8 \$ & 3 Ω 2 7 ∅ 9 # 1 * £ 1 + & @ 5 (Right)

If all the symbols are dropped from the series, which of the following will be sixth from the right?

- Ans**
- ☐ 1. 1
 - ☐ 2. 3
 - ☐ 3. 7
 - ☒ 4. 2

Q.16 A cistern 6m long and 4 m wide contains water up to a depth of 1 m 25 cm. The total area of the wet surface is:

- Ans**
- ☒ 1. 55 m^2
 - ☒ 2. 49 m^2
 - ☒ 3. 50 m^2
 - ☒ 4. 53.5 m^2

Q.17 Which of the following is NOT the correct relation between electric power (P), electric current(I), electric potential difference (V) and resistance(R):

- Ans**
- ☒ 1. $P = IR$
 - ☒ 2. $P = VI$
 - ☒ 3. $P = I^2 R$
 - ☒ 4. $P = \frac{V^2}{R}$

Q.18 Apical meristem is present in which of the following?

- Ans**
- ☒ 1. Virus
 - ☒ 2. Bacteria
 - ☒ 3. Animals
 - ☒ 4. Plants

Q.19 A perfect square number can never have the digit _____ at the units' place.

- Ans**
- ☒ 1. 4
 - ☒ 2. 8
 - ☒ 3. 1
 - ☒ 4. 9

Q.20 What product is formed in the chlor-alkali process?

- Ans**
- ☒ 1. Washing Soda
 - ☒ 2. Sodium Chloride
 - ☒ 3. Baking Soda
 - ☒ 4. Sodium Hydroxide

Q.21 Which of the following alcohols is used in cough syrups?

- Ans**
- ☒ 1. Ethanoic acid
 - ☒ 2. Methanol
 - ☒ 3. Ethanol
 - ☒ 4. Propanol

Q.22 Which of the following compounds is/are saturated?

(i) C_2H_6

(ii) C_3H_8

(iii) C_2H_4

(iv) C_4H_{10}

- Ans
- ☐ 1. i and iv
 - ☐ 2. i, ii and iii
 - ☒ 3. i, ii and iv
 - ☐ 4. i and ii

Q.23 Known for its rich cultural heritage, which of the following is India's first UNESCO 'City of Literature'?

- Ans
- ☐ 1. Bhopal
 - ☒ 2. Kozhikode
 - ☐ 3. Jaipur
 - ☐ 4. Lucknow

Q.24 In an election between two candidates, the candidate who won received 1854 votes, whereas the candidate who lost received 618 votes. What percentage of the total number of votes received by the two candidates went in favour of the winning candidate?

- Ans
- ☐ 1. 60%
 - ☐ 2. 70%
 - ☐ 3. 80%
 - ☒ 4. 

Q.25 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. No one sits to the right of A. Only four people sit between D and B. E sits second to the right of D. C sits to the immediate left of F. How many people sit between G and B?

- Ans
- ☒ 1. Three
 - ☐ 2. One
 - ☐ 3. Four
 - ☐ 4. Two

Q.26 In a triangular glass prism, there is/are _____.

- Ans
- ☐ 1. three triangular bases and one rectangular lateral surface
 - ☐ 2. one triangular base and three rectangular lateral surfaces
 - ☐ 3. three triangular bases and three rectangular lateral surfaces
 - ☒ 4. two triangular bases and three rectangular lateral surfaces

Q.27 If a 3-digit number $42a$ is divisible by 9, then the value of digit 'a' is:

- Ans
- ☒ 1. 3
 - ☐ 2. 6
 - ☐ 3. 9
 - ☐ 4. 1

Q.28 The sum of three consecutive multiples of 6 is 3240, find the smallest one.

- Ans**
- ☐ 1. 1054
 - ☐ 2. 
 - ☐ 3. 1086
 - ☒ 4. 1074

Q.29 In a certain code language,
'P + Q' means 'P is the brother of Q',
'P - Q' means 'P is the daughter of Q',
'P x Q' means 'P is the wife of Q' and
'P ÷ Q' means 'P is the son of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☐ 1. Brother
 - ☒ 2. Son's son
 - ☐ 3. Son
 - ☐ 4. Daughter's son

Q.30 Rajveer has invested ₹16,000 at 10% p.a. for 1 year on compound interest, compounded half-yearly. The amount received by him will be:

- Ans**
- ☐ 1. ₹16,542
 - ☐ 2. ₹16,354
 - ☐ 3. ₹17,830
 - ☒ 4. ₹17,640

Q.31 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Noise pollution is an invisible danger. It cannot be seen, but it is present nonetheless, both on land and under the sea. Noise pollution is considered to be any unwanted or disturbing sound that affects the health and well-being of humans and other organisms.

Reasons:

- I. Some of its major causes are vehicles, aircraft, industrial machines, loudspeakers, crackers, etc.
- II. When used at high volume, some other appliances also contribute to noise pollution, like television, transistor, radio, etc.

- Ans**
- ☒ 1. Both I and II are possible reasons.
 - ☐ 2. Only II is a possible reason.
 - ☐ 3. Only I is a possible reason.
 - ☐ 4. Neither I nor II is a possible reason.

Q.32 Pure ghee costs ₹100 per kg. After adulterating it with vegetable oil costing ₹50 per kg, a shopkeeper sells the mixture at the rate of ₹96 per kg, thereby making a profit of 20%. In what ratio does he mix the two?

- Ans**
- ☒ 1. 3 : 2
 - ☐ 2. 1 : 2
 - ☐ 3. 3 : 1
 - ☐ 4. 4 : 1

Q.33 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ✓ 1. FCG
 - ✗ 2. LIN
 - ✗ 3. IFK
 - ✗ 4. QNS

Q.34 Which of the following statements is/are true for the gravitational force between two bodies:

- (i) It is repulsive in nature.
- (ii) It's magnitude is same throughout the universe.
- (iii) It is directly proportional to the product of the masses of the bodies.
- (iv) Due to this force the earth goes around the sun.

- Ans**
- ✗ 1. Both (ii) and (iii)
 - ✗ 2. Both (i) and (ii)
 - ✓ 3. Both (iii) and (iv)
 - ✗ 4. Only (iii)

Q.35 An electric water heater converts electrical energy into _____.

- Ans**
- ✗ 1. potential energy
 - ✗ 2. wind energy
 - ✓ 3. heat energy
 - ✗ 4. light energy

Q.36 In a certain code language, 'CARD' is coded as '5193' and 'ROSE' is coded as '8612'. What is the code for 'R' in the given code language?

- Ans**
- ✗ 1. 8
 - ✗ 2. 9
 - ✓ 3. 1
 - ✗ 4. 5

Q.37 Simplify the following expression:

$$\frac{\cos \theta}{1 + \sin \theta} + \frac{1 + \sin \theta}{\cos \theta}$$

- Ans**
- ✗ 1. $2 \cos \theta$
 - ✗ 2. $2 \sin \theta$
 - ✗ 3. $1 + 2 \sin \theta$
 - ✓ 4. $2 \sec \theta$

Q.38 Match Pradhan Mantri Mudra Yojana Categories with the Loan Amount as updated in the Union Budget 2023-24 and select the correct answer.

List I (Mudra Loans Categories) List II (Loan Amount)

- (1) Shishu (A). Upto ₹50,000
(2) Kishor (B). Above ₹50,000 and up to ₹5 lakh
(3) Tarun (C) Above ₹5 lakh and up to ₹10 lakh
(4) Tarun Plus (D). Above ₹10 lakh and up to ₹20 lakh

Codes:

- Ans** ☐ 1. 1 - B, 2 - A, 3 - D, 4 - C
☐ 2. 1 - A, 2 - B, 3 - D, 4 - C
☐ 3. 1 - A, 2 - C, 3 - B, 4 - D
☒ 4. 1 - A, 2 - B, 3 - C, 4 - D

Q.39 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 56 :: 84 : Y

- Ans** ☐ 1. X = 108, Y = 62
☐ 2. X = 98, Y = 32
☐ 3. X = 96, Y = 54
☒ 4. X = 92, Y = 48

Q.40 In $\triangle ABC$, $BD \perp AC$ at D and $\angle DBC = 54^\circ$. E is a point on BC such that $\angle CAE = 34^\circ$. What is the measure of $\angle AEB$?

- Ans** ☐ 1. 80°
☐ 2. 56°
☐ 3. 78°
☒ 4. 70°

Q.41 A constant force F is applied on an object. The work done by the force is positive if the object:

- Ans** ☐ 1. is displaced perpendicular to the force
☒ 2. is displaced in the direction of the force
☐ 3. is not displaced
☐ 4. Is displaced opposite to the direction of the force

Q.42 Which of the following is a biodegradable substance?

- Ans** ☒ 1. Dead plant
☐ 2. Plastic bag
☐ 3. Glass
☐ 4. Electric wire

Q.43 Select the correct statement.

- Ans**
- ☐ 1. The fallopian tube is also known as womb.
 - ☐ 2. Many eggs are produced every month by the ovary.
 - ☐ 3. One oviduct forms the uterus.
 - ☒ 4. When a girl is born, the ovaries already contain thousands of immature eggs.

Q.44 B is thrice as good a workman as A and therefore is able to finish a job in 60 days less than A. Working together, they can do it in:

- Ans**
- ☐ 1. 25 days
 - ☐ 2. 20 days
 - ☒ 3. $22\frac{1}{2}$ days
 - ☐ 4. 30 days

Q.45 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

18, 23, 33, 48, 68, ?

- Ans**
- ☐ 1. 85
 - ☐ 2. 90
 - ☒ 3. 93
 - ☐ 4. 95

Q.46 A resistor has a resistivity ρ . This resistor is now cut into three equal parts. The resistivity of each part will be:

- Ans**
- ☒ 1. ρ
 - ☐ 2. 6ρ
 - ☐ 3. $\frac{\rho}{3}$
 - ☐ 4. 3ρ

Q.47 The first and only disabled person to hold the position of State Commissioner for Persons with Disabilities in the history of state, awarded with Padma Shri in 2024, Dr. KS Rajanna belongs to which of the following Indian states?

- Ans**
- ☐ 1. Kerala
 - ☒ 2. Karnataka
 - ☐ 3. Tamil Nadu
 - ☐ 4. Andhra Pradesh

Q.48 Seven boxes, A, B, E, F, L, M and P, are kept one over the other but not necessarily in the same order. Only two boxes are kept between L and B. Only A is kept above E. No box is kept below B. M is kept at some place below F but at some place above P. Which box is kept third above P?

- Ans**
- ☐ 1. L
 - ☐ 2. A
 - ☐ 3. E
 - ☒ 4. F

Q.49 The equivalent fraction of 5.2222..... is:

- Ans**
- ☐ 1. $\frac{422}{99}$
 - ☐ 2. $\frac{38}{9}$
 - ☒ 3. $\frac{47}{9}$
 - ☐ 4. $\frac{48}{100}$

Q.50 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tigers are lions.

Some lions are cheetahs.

Conclusions:

I. Some lions are tigers.

II. Some tigers are cheetahs.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☐ 2. Neither conclusion I nor II follows
 - ☒ 3. Only conclusion I follows
 - ☐ 4. Only conclusion II follows

Q.51 A ribbon of length 8 m 54 cm is cut into 7 pieces of equal length. The length of each piece is:

- Ans**
- ☐ 1. 1.12 m
 - ☐ 2. 1.02 m
 - ☐ 3. 1.32 m
 - ☒ 4. 1.22 m

Q.52 Which Australian vessel participated in Exercise Malabar, 2024?

- Ans**
- ☐ 1. HMAS Adelaide
 - ☒ 2. HMAS Stuart
 - ☐ 3. HMAS Sydney
 - ☐ 4. HMAS Hobart

Q.53 Which of the following is the valency of carbon in ethene?

- Ans**
- ☒ 1. Four
 - ☐ 2. Two
 - ☐ 3. Six
 - ☐ 4. Three

Q.54 Which of the following statements is/are correct related to transportation?

- (i) Arteries are the vessels which carry blood away from the heart to various organs of the body.
- (ii) The arteries have thin and elastic walls.
- (iii) Veins have valves that ensure that blood flows only in one direction.

- Ans**
- ☐ 1. Only (i)
 - ☐ 2. Only (i) and (ii)
 - ☒ 3. Only (i) and (iii)
 - ☐ 4. (i), (ii) and (iii)

Q.55 If the mean and the mode of a particular data set are 36 and 63, respectively, then, using an empirical relation, find the value of the median of the same data set.

- Ans**
- ☐ 1. 39
 - ☒ 2. 45
 - ☐ 3. 55
 - ☐ 4. 40

Q.56 A pipe can fill a tank in 9 hours. Another pipe can empty the filled tank in 36 hours. If both the pipes are opened simultaneously, then the time (in hours) in which the tank will be one-third filled, is:

- Ans**
- ☒ 1. 4
 - ☐ 2. 16
 - ☐ 3. 8
 - ☐ 4. 12

Q.57 Which type of reproduction is seen in Spirogyra?

- Ans**
- ☐ 1. Budding
 - ☐ 2. Binary fission
 - ☐ 3. Vegetative propagation
 - ☒ 4. Fragmentation

Q.58 What is the direction of the magnetic field produced by a current carrying straight wire?

- Ans**
- ☐ 1. At an angle 45° to the plane of the wire
 - ☐ 2. Parallel to the plane of the wire
 - ☐ 3. At an angle 60° to the plane of the wire
 - ☒ 4. Perpendicular to the plane of the wire

Q.59 A ray of light passing or appear to pass through the principal focus of a concave/convex mirror after reflection _____.

- Ans**
- ☐ 1. will emerge perpendicular to the principal axis, only in the case of concave mirror
 - ☒ 2. will emerge parallel to the principal axis
 - ☐ 3. will emerge perpendicular to the principal axis, only in the case of convex mirror
 - ☐ 4. will emerge perpendicular to the principal axis

Q.60 The chemical formula of ammonium sulphate is _____.

- Ans
- ☐ 1. Ca_2SO_4
 - ☐ 2. $(\text{NH}_4)\text{SO}_4$
 - ☐ 3. Na_2SO_4
 - ☒ 4. $(\text{NH}_4)_2\text{SO}_4$

Q.61 The position(s) of how many letters will remain unchanged if each of the letters in the word DEFAULT is arranged in the English alphabetical order ?

- Ans
- ☐ 1. 1
 - ☒ 2. 0
 - ☐ 3. 2
 - ☐ 4. 3

Q.62 Which of the following non-metals is liquid at room temperature?

- Ans
- ☐ 1. Oxygen
 - ☐ 2. Fluorine
 - ☒ 3. Bromine
 - ☐ 4. Mercury

Q.63 Complex substances are broken down into simpler ones with the use of bio-catalysts called:

- Ans
- ☐ 1. fat
 - ☐ 2. carbohydrates
 - ☒ 3. enzymes
 - ☐ 4. oil

Q.64 The value of Universal Gravitational constant is G on a certain planet of mass M , on another planet of mass $4M$, the value of the Universal Gravitational constant will be:

- Ans
- ☐ 1. Zero
 - ☐ 2. $G/2$
 - ☐ 3. $4G$
 - ☒ 4. G

Q.65 Find the value of $(10001 + 12) (10001 - 12)$.

- Ans
- ☐ 1. 1000190857
 - ☐ 2. 10019857
 - ☐ 3. 1000019857
 - ☒ 4. 100019857

Q.66 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans
- ☒ 1. RO-SV
 - ☐ 2. WT-XZ
 - ☐ 3. UR-VX
 - ☐ 4. NK-OQ

Q.67 The number of chromosomes become half in a daughter cell by the process of:

- Ans
- ☐ 1. mitosis
 - ☐ 2. binary fission
 - ☐ 3. amitosis
 - ☒ 4. meiosis

Q.68 Which of the following hydrocarbons generally produces a clean flame?

- Ans
- ☐ 1. Ethyne
 - ☐ 2. Ethylene
 - ☐ 3. Ethene
 - ☒ 4. Ethane

Q.69 A tin of biscuits weighs 1 kg 750 g. What is the total weight of 7 such tins?

- Ans
- ☐ 1. 12.150 kg
 - ☒ 2. 12.250 kg
 - ☐ 3. 12.050 kg
 - ☐ 4. 12.350 kg

Q.70 Flexibility in plants is due to:

- Ans
- ☒ 1. collenchyma
 - ☐ 2. parenchyma
 - ☐ 3. cambium
 - ☐ 4. sclerenchyma

Q.71 What is used in the preparation of calcium sulphate hemihydrate?

- Ans
- ☒ 1. Gypsum
 - ☐ 2. Sodium Hydrogen Carbonate
 - ☐ 3. Copper Sulphate
 - ☐ 4. Sodium Carbonate

Q.72 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 26?

- Ans
- ☐ 1. 29 D 34 B 2 C 4 A 5
 - ☐ 2. 29 B 34 C 2 A 4 D 5
 - ☐ 3. 29 A 34 D 2 B 4 C 5
 - ☒ 4. 29 C 34 A 2 D 4 B 5

Q.73 'Charaideo Moidam' of which of the following northeast Indian states were included in the UNESCO World Heritage list in July 2024?

- Ans
- ☐ 1. Arunachal Pradesh
 - ☒ 2. Assam
 - ☐ 3. Tripura
 - ☐ 4. Nagaland

Q.74 What is the primary goal of the NASA-ISRO Synthetic Aperture Radar (NISAR) mission?

- Ans**
- ✓ 1. Climate action
 - ✗ 2. Trade monitoring
 - ✗ 3. Defense satellites
 - ✗ 4. Space tourism

Q.75 If a person covers 90 km at a speed of 45 km/h and another distance of 150 km at a speed of 50 km/h, then his average speed for the whole journey is:

- Ans**
- ✗ 1. 46 km/h
 - ✗ 2. 49 km/h
 - ✓ 3. 48 km/h
 - ✗ 4. 47 km/h

Q.76 Who among the following are the founders of the Indian startup Zepto, who have emerged as the youngest billionaires in India according to the 2024 Hurun Rich List?

- Ans**
- ✗ 1. Asit Biswal and Rajesh Pradhan
 - ✓ 2. Kaivalya Vohra and Aadit Palicha
 - ✗ 3. Kabeer Biswas and Ankur Agarwal
 - ✗ 4. Girish Redekar and Raghuveer Kancherla

Q.77 Who among the following players won the men's player of the year award in the Hockey India Awards 2023 that was held in New Delhi on 31 March 2024?

- Ans**
- ✓ 1. Hardik Singh
 - ✗ 2. Manpreet Singh
 - ✗ 3. PR Sreejesh
 - ✗ 4. Abhishek

Q.78 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HKO, JMQ, LOS, NQU, ?

- Ans**
- ✓ 1. PSW
 - ✗ 2. PWS
 - ✗ 3. SWP
 - ✗ 4. SPW

Q.79 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some walls are roofs.

All roofs are cats.

All cats are grasses.

Conclusions:

(I) Some grasses are walls.

(II) All grasses are roofs.

- Ans**
- ✓ 1. Only conclusion (I) follows.
 - ✗ 2. Both conclusions (I) and (II) follow.
 - ✗ 3. Only conclusion (II) follows.
 - ✗ 4. Neither conclusion (I) nor (II) follows.

Q.80 What product will be formed when ethanol at 443K with excess concentrated sulphuric acid is heated?

- Ans**
- ✓ 1. Ethene and water
 - ✗ 2. Ethane and water
 - ✗ 3. Ethyne and hydrogen
 - ✗ 4. Only ethyne

Q.81 At what rate (in percentage) per annum simple interest will a sum of money double itself in 8 years?

- Ans**
- ✓ 1. 12.5%
 - ✗ 2. 5.6%
 - ✗ 3. 2.5%
 - ✗ 4. 6.25%

Q.82 Which of the following statements is NOT true?

- Ans**
- ✗ 1. Energy can neither be created nor destroyed.
 - ✗ 2. The total energy before and after the transformation always remains constant.
 - ✗ 3. Energy can only be transformed from one form to another.
 - ✓ 4. The total energy before and after the transformation is not constant.

Q.83 Which team won the title of World Championship of Legends 2024 in cricket?

- Ans**
- ✗ 1. Australia
 - ✗ 2. Pakistan
 - ✓ 3. India
 - ✗ 4. Sri Lanka

Q.84 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

TODE - EOTD - ODTE

FAST - TAFS - ASFT

- Ans**
- ✗ 1. NEST - TENS - SENT
 - ✓ 2. BACK - KABC - ACBK
 - ✗ 3. PACK - APCK - KACP
 - ✗ 4. GREW - GERW - WERG

Q.85 In a certain code language, 'VOCAL' is coded as '46218' and 'OVALS' is coded as '68514'. What is the code for 'S' in the given code language?

- Ans**
- ✗ 1. 1
 - ✓ 2. 5
 - ✗ 3. 6
 - ✗ 4. 4

Q.86 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits second to the right of B. Only one person sits between B and E. R sits to the immediate right of F. P is not an immediate neighbour of E. Who sits third to the left of Q?

- Ans**
- ✗ 1. R
 - ✗ 2. A
 - ✗ 3. 
 - ✓ 4. F

Q.87 EHCF is related to ILGJ in a certain way based on the English alphabetical order. In the same way, HKFI is related to LOJM. To which of the following options is MPKN related, following the same logic?

- Ans**
- ☐ 1. TQOR
 - ☐ 2. QTRO
 - ☒ 3. QTOR
 - ☐ 4. TQRO

Q.88 When we stretch a spring, the form of energy stored in the spring is _____.

- Ans**
- ☐ 1. electric energy
 - ☐ 2. gravitational energy
 - ☒ 3. potential energy
 - ☐ 4. kinetic energy

Q.89 Select the correct option related to the function regulated by ovaries.

- Ans**
- ☒ 1. Menstrual cycle
 - ☐ 2. Stimulates growth in all organs
 - ☐ 3. Regulates metabolism
 - ☐ 4. Stimulates pituitary glands

Q.90 The greatest ratio out of 2 : 3, 5 : 4, 3 : 2 and 4 : 5 is:

- Ans**
- ☐ 1. 2 : 3
 - ☐ 2. 4 : 5
 - ☒ 3. 3 : 2
 - ☐ 4. 5 : 4

Q.91 By what per cent does the curved surface area of a cylinder decrease, if the radius is increased by 30% and the height is decreased by 30%?

- Ans**
- ☒ 1. 9%
 - ☐ 2. 0%
 - ☐ 3. 30%
 - ☐ 4. 60%

Q.92 The radius of curvature of any mirror is +20 cm. What is the focal length and nature of this mirror?

- Ans**
- ☒ 1. +10 cm, convex
 - ☐ 2. -40 cm, convex
 - ☐ 3. +10 cm, concave
 - ☐ 4. +40 cm, concave

Q.93 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

274, 252, 282, 260, 290, 268, ?

- Ans**
- ☐ 1. 284
 - ☐ 2. 272
 - ☒ 3. 298
 - ☐ 4. 280

Q.94 Which of the following electrolytes is used in electrolytic refining of copper?

- Ans**
- ☐ 1. CuO
 - ☒ 2. CuSO₄
 - ☐ 3. Na₂SO₄
 - ☐ 4. 

Q.95 Due to a reduction of 6.25% in the price of sugar, a man can buy 1 kg more for ₹120. The reduced price per kg of sugar is:

- Ans**
- ☐ 1. ₹7
 - ☐ 2. ₹8
 - ☐ 3. ₹6.5
 - ☒ 4. ₹7.5

Q.96 In a mixture of 80 litres, the ratio of milk to water is 3 : 1. The quantity of milk in the mixture is:

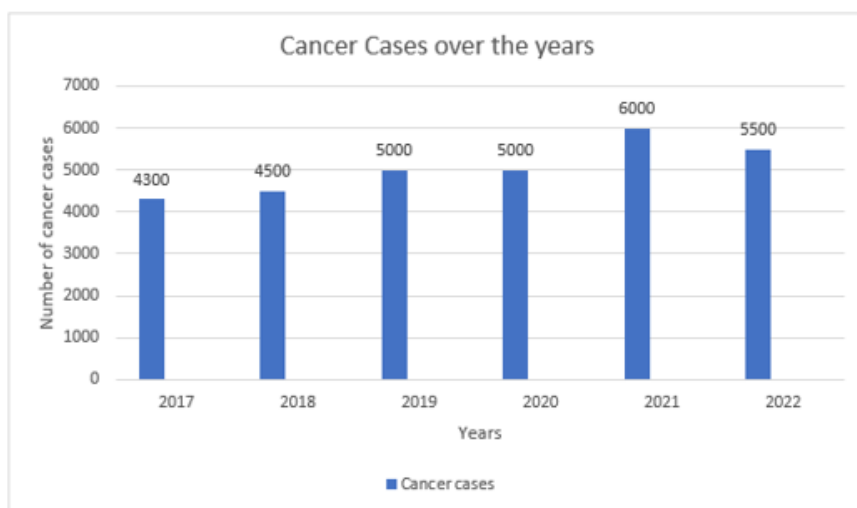
- Ans**
- ☐ 1. 40 litres
 - ☒ 2. 60 litres
 - ☐ 3. 20 litres
 - ☐ 4. 80 litres

Q.97 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged?

$$23 - 7 \times 15 \div 5 + 17 = ?$$

- Ans**
- ☐ 1. 30
 - ☐ 2. 25
 - ☒ 3. 27
 - ☐ 4. 24

Q.98 Study the following bar graph and answer the question below.



What is the average number of cancer cases over the years?

- Ans**
- ☐ 1. 5005
 - ☐ 2. 5550
 - ☒ 3. 5050
 - ☐ 4. 5500

Q.99 Which of the following is the longest cell in our body?

- Ans
- ☐ 1. Fat cell
 - ☒ 2. Nerve cell
 - ☐ 3. Blood cell
 - ☐ 4. Ovum

Q.100 In Bryophyllum, vegetative propagation takes place by:

- Ans
- ☒ 1. buds produced in the notches along the leaf margin
 - ☐ 2. stamen
 - ☐ 3. petal
 - ☐ 4. pistil

2024/12/30-11:31:56



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Vellore
Test Date	29/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

IMH, LPK, OSN, RVQ, ?

- Ans**
- ☒ 1. YTU
 - ☒ 2. YUT
 - ☒ 3. UYT
 - ☒ 4. UTY

Q.2 A man sells two houses at the rate of ₹1.995 lakhs each. On one he gains 5% and on the other he loses 5%. His gain or loss percentage in the whole transaction is:

- Ans**
- ☒ 1. 25% loss
 - ☒ 2. 0.25% loss
 - ☒ 3. 0.25% gain
 - ☒ 4. 2.5% loss

Q.3 $\frac{\sin\theta(1+\cos\theta)}{1+\cos\theta-\sin^2\theta}$, $0^\circ < \theta < 90^\circ$, is equal to :

- Ans**
- ☒ 1. $\sec \theta$
 - ☒ 2. $\tan \theta$
 - ☒ 3. $\operatorname{cosec} \theta$
 - ☒ 4. $\sin \theta$

Q.4 Convert the decimal number $0.\overline{33}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

- Ans**
- ☒ 1. $\frac{1}{3}$
 - ☒ 2. $\frac{1}{33}$
 - ☒ 3. $\frac{1}{9}$
 - ☒ 4. $\frac{1}{99}$

- Q.5** A, B and C can do a piece of work in 15, 10 and 30 days, respectively. In how many days can A do the work if he is assisted by B and C on every 3rd day?
- Ans** ☒ 1. 9 days
☐ 2. 12 days
☐ 3. 15 days
☐ 4. 6 days
- Q.6** The arithmetic mean of 22.5, 56, 42.5, $2x + 1$, $x - 2$, $3x$, 36 is 30. Find x , where $x > 0$.
- Ans** ☒ 1. 9
☐ 2. 7
☐ 3. 4
☐ 4. 6
- Q.7** What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?
 $35 \times 7 + 2 \div 6 - 13 = ?$
- Ans** ☐ 1. 4
☐ 2. 9
☒ 3. 6
☐ 4. 7
- Q.8** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.
PL-QN-ST
JF-KH-MN
- Ans** ☐ 1. SO-TQ-VX
☒ 2. MI-NK-PQ
☐ 3. QM-RO-TV
☐ 4. TP-UR-WY
- Q.9** A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 19-times of the same work in _____(days).
- Ans** ☐ 1. 5
☒ 2. 76
☐ 3. 4
☐ 4. 77
- Q.10** An object is placed between F and 2F of a concave lens. Which of the following options represents the characteristics of the image formed?
- Ans** ☒ 1. Virtual and diminished
☐ 2. Real and diminished
☐ 3. Virtual and enlarged
☐ 4. Real and enlarged
- Q.11** Which of the following is NOT a suitable method to deal with non-biodegradable substances?
- Ans** ☐ 1. Reuse them
☐ 2. Recycle them
☐ 3. Reduce their production
☒ 4. Throw them openly

Q.12 Who among the following won the first 'MTArt Agency x India Art Fair Artist Prize' during the 15th India Art Fair held in February 2024?

- Ans**
- ✓ 1. Sajid Wajid Sheikh
 - ✗ 2. Asha Parekh
 - ✗ 3. Birendranath Sircar
 - ✗ 4. Devika Rani

Q.13 Lakhan and Ram start a business by investing ₹48,000 and ₹72,000, respectively. What is Ram's share out of the annual profit of ₹6,530?

- Ans**
- ✗ 1. ₹2,612
 - ✗ 2. ₹2,450
 - ✓ 3. ₹3,918
 - ✗ 4. ₹3,080

Q.14 Select the INCORRECT pair.

- Ans**
- ✓ 1. Lactic acid – 4 carbon molecules
 - ✗ 2. Pyruvate – 3 carbon molecules
 - ✗ 3. Ethanol – 2 carbon molecules
 - ✗ 4. Glucose – 6 carbon molecules

Q.15 Which of the following sportspersons was one of the India's flagbearers for the Paris 2024 Olympics?

- Ans**
- ✓ 1. A Sharath Kamal
 - ✗ 2. Vinesh Phogat
 - ✗ 3. MC Mary Kom
 - ✗ 4. Neeraj Chopra

Q.16 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(3, 12, 36)

(8, 32, 96)

- Ans**
- ✗ 1. (12, 48, 124)
 - ✗ 2. (14, 48, 144)
 - ✓ 3. (12, 48, 144)
 - ✗ 4. (12, 42, 144)

Q.17 What was the key defense procurement, approved in September 2024, to enhance India's naval defense capabilities?

- Ans**
- ✗ 1. Procurement of multi-role submarines
 - ✓ 2. Approval of seven Project 17B stealth frigates for the Indian Navy
 - ✗ 3. Launch of a new aircraft carrier for the Indian Navy
 - ✗ 4. Acquisition of advanced naval radar systems

Q.18 The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. After how many years from now will the age of Amit and Amita together be 72 years?

- Ans**
- ☐ 1. 4 years
 - ☒ 2. 6 years
 - ☐ 3. 7 years
 - ☐ 4. 5 years

Q.19 What term is used for the reaction between acids and bases that results in the formation of salt and water?

- Ans**
- ☐ 1. Polymerisation reaction
 - ☐ 2. Hydrolysis reaction
 - ☐ 3. Photosynthesis reaction
 - ☒ 4. Neutralisation reaction

Q.20 An organism simply splits into two equal halves during cell division. What is it known as?

- Ans**
- ☒ 1. Binary fission
 - ☐ 2. Budding
 - ☐ 3. Spore formation
 - ☐ 4. Regeneration

Q.21 Which group of companies was named the principal sponsor for Team India at the Paris Olympics 2024?

- Ans**
- ☐ 1. Aditya Birla
 - ☒ 2. Adani
 - ☐ 3. Puma
 - ☐ 4. Reliance

Q.22 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. Only two people sit between A and E. Only P sits to the right of Q. Only one person sits between E and Q. R sits at some place to the right of B but at some place to the left of F. Who sits third from the right end of the row?

- Ans**
- ☒ 1. F
 - ☐ 2. R
 - ☐ 3. B
 - ☐ 4. E

Q.23 Which of the following statements is correct when an acid is dissolved in water ?

- a) The separation of H^+ ions from HCl molecules cannot occur in the absence of water.
- b) Hydrogen ions must always be shown as H^+ (aq) or hydronium ion (H_3O^+).

- Ans**
- ☐ 1. Only b
 - ☒ 2. Both a and b
 - ☐ 3. Only a
 - ☐ 4. Neither a nor b

Q.24 Which one of the following organisms shows multiple fission?

- Ans ☒ 1. Plasmodium
☐ 2. Hydra
☐ 3. Yeast
☐ 4. Leishmania

Q.25 Evaluate the given expression.

$$(-20) \times (-1) + 14 \div 7$$

- Ans ☐ 1. -22
☐ 2. -18
☐ 3. 18
☒ 4. 22

Q.26 Identify the correct match.

- Ans ☐ 1. Bacterial infections : Warts and syphilis
Viral infections : Gonorrhoea and HIV-AIDS
Bacterial infections : Gonorrhoea and syphilis
☒ 2. Viral infections : Warts and HIV-AIDS
Bacterial infections : Warts and HIV-AIDS
☐ 3. Viral infections : Gonorrhoea and syphilis
Bacterial infections : Warts and gonorrhoea
☐ 4. Viral infections : Syphilis and HIV-AIDS

Q.27 The kinetic energy E possessed by an object of mass m and moving with a uniform velocity v is _____.

- Ans ☐ 1. $m v^{-2}$
☐ 2. $\frac{1}{3} m v^2$
☒ 3. $\frac{1}{2} m v^2$
☐ 4. $m v^2$

Q.28 The Finance Minister, in the Union Budget 2024-25, announced the increased loan limit to ₹20 lakhs from the existing ₹10 lakhs of which of the following schemes?

- Ans ☐ 1. Prime Minister's Employment Generation Programme (PMEGP)
☒ 2. Pradhan Mantri MUDRA Yojana (PMMY)
☐ 3. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)
☐ 4. Stand-Up India Scheme

Q.29 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 9 7 4 5 1 8 2 7 5 1 3 4 2 3 7 4 9 5 2 7 5 6 9 2 8 5 4 1 9 3 (Right)

How many such odd digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ☒ 1. 3
 - ☐ 2. 1
 - ☐ 3. 2
 - ☐ 4. 4

Q.30 Dr. Avesh Kumar Tyagi, the recipient of Vigyan Shri Award 2024 in the field of Atomic Energy, is associated with which of the following institutes as of 01 November 2024?

- Ans**
- ☐ 1. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam
 - ☐ 2. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
 - ☐ 3. Variable Energy Cyclotron Centre (VECC), Kolkata
 - ☒ 4. Bhabha Atomic Research Centre (BARC), Mumbai

Q.31 Seven boxes A, B, E, F, L, M and P are kept one over the other but not necessarily in the same order. Only A is kept above E. Only F is kept between E and B. Only P is kept below M. How many boxes are kept between L and P?

- Ans**
- ☒ 1. One
 - ☐ 2. Two
 - ☐ 3. Three
 - ☐ 4. Four

Q.32 Identify the INCORRECT statement related to neurons.

- Ans**
- ☐ 1. Each neuron has multiple short, branching sections called dendrites.
 - ☐ 2. Nervous tissue consists of cells known as neurons.
 - ☒ 3. The cell body of a neuron has many nuclei.
 - ☐ 4. Neurons typically have one long section called the axon.

Q.33 An electric geyser of resistance $4\ \Omega$ produces 100 J of heat per sec. The current flowing through it will be:

- Ans**
- ☐ 1. 50 A
 - ☒ 2. 5 A
 - ☐ 3. 2.5 A
 - ☐ 4. 25 A

Q.34 Town L is to the south of Town B. Town Q is to the south-east of Town B. Town N is to the north of Town Q. Town M is to the west of Town B. Town N is to the east of Town M. Town L is to the south-west of Town N. What is the position of Town B with respect to Town N?

- Ans**
- ☒ 1. West
 - ☐ 2. North
 - ☐ 3. South
 - ☐ 4. East

Q.35 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

WILD - IWLD - WLDI

TALK - ATLK - TLKA

- Ans**
- ☒ 1. FAIL - AFIL - LAIF
 - ☒ 2. BOSE - OBSE - OSEB
 - ☒ 3. RICE - RCIE - ECIR
 - ☒ 4. VICE - IVCE - VCEI

Q.36 The distance from the focus point of a mirror to the pole is known as:

- Ans**
- ☒ 1. centre of curvature
 - ☒ 2. radius of curvature
 - ☒ 3. aperture
 - ☒ 4. focal length

Q.37 Which of the following statements about solutions is correct?

- Ans**
- ☒ 1. The concentration of a solution can only be expressed in terms of mass per cent.
 - ☒ 2. The solute is present in a smaller amount than the solvent.
 - ☒ 3. A solution is a heterogeneous mixture.
 - ☒ 4. Solutions can be separated using simple filtration.

Q.38 In a certain code language,
'P + Q' means 'P is the sister of Q',
'P - Q' means 'P is the son of Q',
'P x Q' means 'P is the husband of Q' and
'P ÷ Q' means 'P is the daughter of Q'.
How is A related to E if 'A + B - C x D ÷ E'?

- Ans**
- ☒ 1. Sister
 - ☒ 2. Son's daughter
 - ☒ 3. Daughter's daughter
 - ☒ 4. Daughter

Q.39 Find the compound interest on ₹12,000 in 3 years at a rate of 10% per annum, compounded annually.

- Ans**
- ☒ 1. ₹3,972
 - ☒ 2. ₹3,672
 - ☒ 3. ₹3,772
 - ☒ 4. ₹3,872

Q.40 Which of the following is a covalent compound?

- Ans**
- ☒ 1. MgCl_2
 - ☒ 2. CH_4
 - ☒ 3. MgO
 - ☒ 4. NaCl

Q.41 Which of the following is produced when copper is heated in the presence of air?

- Ans
- ☐ 1. Black-coloured copper (I) oxide
 - ☐ 2. Blue-coloured copper(II) oxide
 - ☒ 3. Black-coloured copper (II) oxide
 - ☐ 4. Brown-coloured copper(II) oxide

Q.42 What is the measure of each exterior angle of a regular decagon?

- Ans
- ☒ 1. 36°
 - ☐ 2. 30°
 - ☐ 3. 60°
 - ☐ 4. 45°

Q.43 A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find the difference between C's and B's shares.

- Ans
- ☐ 1. ₹480
 - ☐ 2. ₹360
 - ☒ 3. ₹240
 - ☐ 4. ₹160

Q.44 What is the function of the growth hormone secreted by the pituitary gland?

- Ans
- ☐ 1. It regulates metabolism for body growth.
 - ☐ 2. It regulates the menstrual cycle.
 - ☐ 3. It regulates the blood sugar level.
 - ☒ 4. It stimulates growth in all organs.

Q.45 Which of the following was discovered by Rutherford's gold foil experiment?

- Ans
- ☐ 1. Neutron
 - ☐ 2. Proton
 - ☐ 3. Electron
 - ☒ 4. Nucleus

Q.46 The value of $x^{\frac{1}{2}} \times Y^{-1} \times z^{\frac{2}{3}}$, when $x = 9$, $Y = 3$, and $z = 8$ is:

- Ans
- ☐ 1. 18
 - ☐ 2. 6
 - ☒ 3. 4
 - ☐ 4. 12

Q.47 Given below is a statement followed by two courses of actions, numbered I and II. You must assume everything in the statement to be true, and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

School X has received a notice from the Commissioner of Police on the many complaints that have been received regarding the traffic jam caused outside the school gates every morning between 8 a.m. and 9 a.m. due to illegal parking of cars.

Courses of Action:

(I) School X should deploy security personnel to monitor the illegal car parking outside school gates and clear any jams being caused.

(II) School X should ban parents from dropping their children by car to the school.

- Ans**
- ☐ 1. Both I and II follow
 - ☐ 2. Neither I nor II follows
 - ☐ 3. Only II follows
 - ☒ 4. Only I follows

Q.48 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '÷', what will come in place of the question mark '?' in the following equation?

$$16 \text{ C } 24 \text{ A } 3 \text{ B } 8 \text{ D } 5 = ?$$

- Ans**
- ☐ 1. 65
 - ☐ 2. 70
 - ☐ 3. 80
 - ☒ 4. 75

Q.49 Seven people, A, B, C, D, E, F and G, are sitting in a row, facing north. B sits third from the right end. Only one person sits to the left of D. F sits to the right of B but left of G. E is an immediate neighbour of C and D. How many people sit between A and G?

- Ans**
- ☐ 1. Three
 - ☐ 2. Four
 - ☒ 3. Five
 - ☐ 4. Two

Q.50 The shortest distance measured from the initial to the final position of an object is known as _____.

- Ans**
- ☐ 1. acceleration
 - ☒ 2. displacement
 - ☐ 3. velocity
 - ☐ 4. speed

Q.51 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is same as that on the right side of ::?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

$$X : 19 :: 92 : Y$$

- Ans**
- ☐ 1. $X = 84, Y = 26$
 - ☒ 2. $X = 76, Y = 23$
 - ☐ 3. $X = 88, Y = 21$
 - ☐ 4. $X = 98, Y = 24$

Q.52 What was the theme of 'Vigilance Awareness Week' observed from 28th October to 3rd November 2024, which is an initiatives of the Central Vigilance Commission in the fight against corruption?

- Ans**
- ☒ 1. Say No to Corruption; Commit to the Nation
 - ☒ 2. Corruption Free India for a Developed National
 - ☒ 3. Satark Bharat, Samriddh Bharat
 - ☒ 4. Culture of Integrity for Nation's Prosperity

Q.53 Match the following.

(i) Ovary	(a) fertilisation
(ii) Oviduct	(b) implantation
(iii) Uterus	(c) nourishes the growing embryo
(iv) Placenta	(d) makes the female gametes

- Ans**
- ☒ 1. (i)-(b), (ii)-(a), (iii)-(d), (iv)-(c)
 - ☒ 2. (i)-(d), (ii)-(c), (iii)-(b), (iv)-(a)
 - ☒ 3. (i)-(d), (ii)-(a), (iii)-(b), (iv)-(c)
 - ☒ 4. (i)-(d), (ii)-(b), (iii)-(a), (iv)-(c)

Q.54 The area (in cm²) of an equilateral triangle whose altitude from vertex is 9 cm, is:

- Ans**
- ☒ 1. $\frac{9\sqrt{3}}{4}$
 - ☒ 2. $12\sqrt{3}$
 - ☒ 3. $\frac{3\sqrt{3}}{2}$
 - ☒ 4. $27\sqrt{3}$

Q.55 Which of the following statements is/are correct related to eco-system?

- (i) UV radiation is not damaging to organisms.
- (ii) Ozone at the higher levels of the atmosphere is a product of UV radiation acting on oxygen molecule.
- (iii) The amount of ozone in the atmosphere began to drop sharply in 1980.

- Ans**
- ☒ 1. Only (ii) and (iii)
 - ☒ 2. Only (i) and (ii)
 - ☒ 3. (i), (ii) and (iii)
 - ☒ 4. Only (i)

Q.56 In a certain code language, 'REVS' is coded as '6942' and 'ORES' is coded as '6421'. What is the code for 'V' in the given code language?

- Ans**
- ☒ 1. 2
 - ☒ 2. 4
 - ☒ 3. 9
 - ☒ 4. 6

Q.57 Which of the following endocrine glands secretes growth hormones?

- Ans
- ☐ 1. Adrenal gland
 - ☐ 2. Testes
 - ☐ 3. Thyroid gland
 - ☒ 4. Pituitary gland

Q.58 Simplify the following expression:

$$9993 \times 10007$$

- Ans
- ☒ 1. 99999951
 - ☐ 2. 91999949
 - ☐ 3. 9999951
 - ☐ 4. 9999949

Q.59 Which of the following statements is INCORRECT?

- Ans
- ☐ 1. Potassium is more reactive than gold.
 - ☐ 2. All metals are not equally reactive.
 - ☐ 3. Silver is less reactive than sodium.
 - ☒ 4. All metals are equally reactive.

Q.60 Who among the following concluded his tenure as the 50th Chief Justice of India in November 2024?

- Ans
- ☐ 1. Justice Abhay S Oka
 - ☒ 2. Justice DY Chandrachud
 - ☐ 3. Justice Surya Kant
 - ☐ 4. Justice Sanjeev Khanna

Q.61 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 3 Ω 9 # 1 7 3 @ 1 ^ 9 # * £ 5 8 5 7 & * £ 5 (Right)

How many such symbols are there, each of which is immediately preceded by an even number and also immediately followed by a symbol?

- Ans
- ☒ 1. None
 - ☐ 2. One
 - ☐ 3. Two
 - ☐ 4. More than two

Q.62 Which of the following Union ministries presented a special festival series titled 'Amrit Parampara' in November 2024?

- Ans
- ☐ 1. Ministry of Textiles
 - ☐ 2. Ministry of Tourism
 - ☒ 3. Ministry of Culture
 - ☐ 4. Ministry of External Affairs

Q.63 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

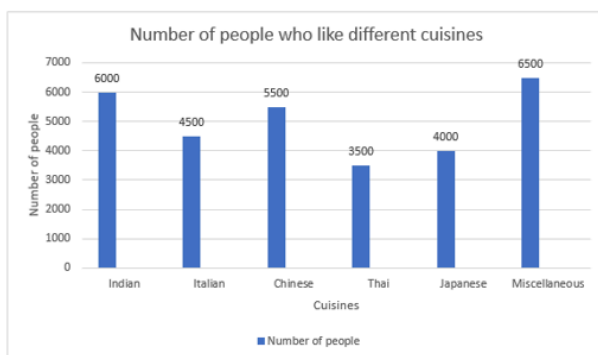
ORN, QTP, SVR, UXT, ?

- Ans**
- ☒ 1. VWZ
 - ☒ 2. WZV
 - ☒ 3. VZW
 - ☒ 4. WVZ

Q.64 The energy transfer within the food web has a _____ pattern.

- Ans**
- ☒ 1. Multidimensional
 - ☒ 2. Unidirectional
 - ☒ 3. Circular
 - ☒ 4. Bidirectional

Q.65 Study the following bar graph and answer the question below.



What is the average number of people who like Indian, Chinese, Thai and miscellaneous cuisines?

- Ans**
- ☒ 1. 5535
 - ☒ 2. 5375
 - ☒ 3. 5735
 - ☒ 4. 5355

Q.66 If A's income is 40% less than B's income, then A's income is what percentage of B's income?

- Ans**
- ☒ 1. 166.67%
 - ☒ 2. 40%
 - ☒ 3. 75%
 - ☒ 4. 60%

Q.67 The ratio of the volumes of two cubes is 729 : 1331. What is the ratio of their total surface areas?

- Ans**
- ☒ 1. 729 : 1331
 - ☒ 2. 81 : 121
 - ☒ 3. 9 : 11
 - ☒ 4. 27 : 121

Q.68 When an object moves in a circular path with uniform speed, its motion is called _____.

- Ans**
- ☒ 1. motion along a straight line
 - ☒ 2. motion along a hemisphere
 - ☒ 3. linear motion
 - ☒ 4. uniform circular motion

Q.69 What will happen if you pour some acetone on your palm?

- Ans**
- ☐ 1. It will cause no effect on the palm.
 - ☐ 2. It will cause the palm to feel itchy.
 - ☒ 3. It will cause the palm to feel cool.
 - ☐ 4. It will cause the palm to feel hot.

Q.70 If the price of sugar decreases by 20%, then by what percentage must a householder increase her consumption of sugar so as to leave her expenditure on sugar unchanged?

- Ans**
- ☐ 1. 20%
 - ☐ 2. $33\frac{1}{3}\%$
 - ☒ 3. 25%
 - ☐ 4. $16\frac{2}{3}\%$

Q.71 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 9 @ 8 \$ 7 & 3 Ω 9 # 1 * £ 5 & % 4 6 (Right)

How many such symbols are there, each of which is immediately preceded by an odd number and also immediately followed by a symbol?

- Ans**
- ☐ 1. More than two
 - ☒ 2. Two
 - ☐ 3. None
 - ☐ 4. One

Q.72 What was the speed of the car if it travelled 150 km of distance in 3 hrs?

- Ans**
- ☒ 1. 50 km/h
 - ☐ 2. 36 km/h
 - ☐ 3. 42 km/h
 - ☐ 4. 40 km/h

Q.73 Which of the following is the general formula of alkane?

- Ans**
- ☒ 1. C_nH_{2n+2}
 - ☐ 2. $C_{2n}H_{2n}$
 - ☐ 3. C_nH_{2n}
 - ☐ 4. C_nH_n

Q.74 Organisms having only one cell are called _____.

- Ans**
- ☐ 1. singular
 - ☒ 2. unicellular
 - ☐ 3. multicellular
 - ☐ 4. unisexual

Q.75 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

36, 72, 45, 90, 63, 126, ?

- Ans**
- ☐ 1. 95
 - ☐ 2. 106
 - ☒ 3. 99
 - ☐ 4. 83

Q.76 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

No door is a lock.

No lock is a key

Conclusions:

I. No door is a key.

II. No lock is a door.

- Ans**
- ☐ 1. Both conclusions I and II follow
 - ☐ 2. Only conclusion I follows
 - ☐ 3. Neither conclusion I nor II follows
 - ☒ 4. Only conclusion II follows

Q.77 Simplify the given expression.

$$\left(\frac{2}{3} + \frac{1}{3}\right) \times 23 - 13 + 9$$

- Ans**
- ☐ 1. 29
 - ☐ 2. 16
 - ☒ 3. 19
 - ☐ 4. 23

Q.78 A current of 1 A is drawn by a filament of an electric bulb for 5 minutes. Then the amount of electric charge that flows through the circuit will be _____.

- Ans**
- ☐ 1. 150 C
 - ☒ 2. 300 C
 - ☐ 3. 5 C
 - ☐ 4. 10 C

Q.79 There are two classrooms A and B having a certain number of students. If 5 students are shifted from A to B, then B has twice the number of students as A. If 1 student is sent from B to A, then both classrooms will have the same number of students. How many students are there in B?

- Ans**
- ☐ 1. 26
 - ☒ 2. 19
 - ☐ 3. 17
 - ☐ 4. 22

Q.80 Which of the following natural phenomena is due to the force of gravitation between the moon and the earth?

- Ans**
- ☐ 1. Blue color of the sky
 - ☐ 2. Thunderstorms
 - ☒ 3. Tides
 - ☐ 4. Rainbow

Q.81 The sodium or potassium salts of which acid are defined as soaps?

- Ans**
- ☐ 1. Hydrochloric acid
 - ☒ 2. Carboxylic acid
 - ☐ 3. Sulphuric acid
 - ☐ 4. Nitric acid

Q.82 If the earth had no atmosphere, then the colour of the sky would be _____.

- Ans**
- ☐ 1. blue
 - ☐ 2. yellow
 - ☒ 3. black
 - ☐ 4. red

Q.83 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All coats are jackets.

Some coats are sweaters.

Conclusions:

(I) Some jackets are not coats.

(II) Some jackets are sweaters.

- Ans**
- ☐ 1. Only conclusion I follows
 - ☐ 2. Only conclusion II follows
 - ☒ 3. Both conclusions I and II follow
 - ☐ 4. Neither conclusion I nor II follows

Q.84 The speed of light is _____.

- Ans**
- ☐ 1. greater in glass than in water
 - ☐ 2. greater in water than in air
 - ☒ 3. greater in water than in glass
 - ☐ 4. same in air, glass and water

Q.85 Which of the following best describes the mixture of air?

- Ans**
- ☒ 1. Homogeneous mixture
 - ☐ 2. Suspension
 - ☐ 3. Heterogeneous mixture
 - ☐ 4. Colloids

Q.86 Which of the following is NOT a reproductive part of Rhizopus?

- Ans**
- ☒ 1. Hyphae
 - ☐ 2. Sporangium
 - ☐ 3. Sporangioophores
 - ☐ 4. Spores

Q.87 In what duration will a sum of money double itself at 5% per annum simple interest?

- Ans**
- ☐ 1. 10 years
 - ☐ 2. 18 years
 - ☒ 3. 20 years
 - ☐ 4. 12 years

Q.88 The number of factors of any prime number is:

- Ans**
- ☐ 1. 3
 - ☐ 2. 4
 - ☐ 3. 1
 - ☒ 4. 2

Q.89 Which of the following does NOT have neurons?

- Ans**
- ☐ 1. Brain
 - ☐ 2. Spinal cord
 - ☐ 3. Nerves
 - ☒ 4. Adipocyte

Q.90 Devansh starts from point A and drives 10 km towards the North. He takes two simultaneous right turns and drives 3 km and 6 km, respectively. He takes a final right turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☒ 1. 4 km South
 - ☐ 2. 4 km North
 - ☐ 3. 3 km East
 - ☐ 4. 6 km South

Q.91 In a displacement reaction, what is the key factor that determines whether a more reactive metal will displace a less reactive metal from its compound?

- Ans**
- ☐ 1. Concentration of the compound
 - ☐ 2. Temperature of the reaction
 - ☒ 3. Position of the metals in the reactivity series
 - ☐ 4. Size of the metal atoms

Q.92 Which of the following edible acids is added to baking soda for making baking powder?

- Ans**
- ☐ 1. Vinegar
 - ☐ 2. Lactic acid
 - ☒ 3. Tartaric acid
 - ☐ 4. Sodium chloride

Q.93 An object is placed in front of a concave mirror of focal length f , and it is found that an image of the same size as that of the object is formed. The object distance u is:

- Ans**
- ☐ 1. equal to f
 - ☐ 2. less than f
 - ☒ 3. equal to $2f$
 - ☐ 4. greater than $2f$

Q.94 If a constant force of 2 Newton is applied on a body such that displacement of the body in the direction of the applied force is zero, then the work done by the force is ____.

- Ans**
- ☐ 1. 2 joules
 - ☒ 2. 0
 - ☐ 3. 20 joules
 - ☐ 4. 1 joules

Q.95 In a certain code language, 'REPS' is coded as '9631' and 'EARS' is coded as '6914'. What is the code for 'A' in the given code language?

- Ans**
- ☐ 1. 1
 - ☒ 2. 4
 - ☐ 3. 9
 - ☐ 4. 6

Q.96 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

- Ans**
- ☒ 1. QM-PR
 - ☐ 2. JF-IL
 - ☐ 3. NJ-MP
 - ☐ 4. LH-KN

Q.97 A book is pushed with a constant force of 1 N. It displaces 1 m in the direction of the force. The work done by the force is:

- Ans**
- ☐ 1. 0
 - ☐ 2. 2 J
 - ☐ 3. -1 J
 - ☒ 4. +1 J

Q.98 Which city won the UN-Shanghai Global Award for its sustainable urban development initiatives in 2024?

- Ans**
- ☐ 1. Agadir
 - ☐ 2. Melbourne
 - ☒ 3. Thiruvananthapuram
 - ☐ 4. Doha

Q.99 A shopkeeper lists the price of a fan at 22% above its cost price and offers a 15% discount on its list price. What is the cost price (in ₹) of the fan if he sells it at ₹5,185?

- Ans**
- ☐ 1. 4,500
 - ☐ 2. 4,800
 - ☒ 3. 5,000
 - ☐ 4. 5,680

Q.100 What is the mode of the following data?

66, 69, 83, 69, 84, 74, 71, 83, 69, 84, 73, 83, 69, 71, 84, 74, 83, 66, 74, 71, 83, 66, 90, 90

- Ans**
- ☐ 1. 90
 - ☐ 2. 84
 - ☒ 3. 83
 - ☐ 4. 74

2024/12/30-13:00:33

blackbook



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	Azad Infotech
Test Date	30/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 The average monthly income of P and Q is ₹5,050. The average monthly income of Q and R is ₹6,250 and the average monthly income of P and R is ₹5,200. The monthly income of P (in ₹) is:

- Ans**
- ☒ 1. 3,500
 - ☒ 2. 5,000
 - ☒ 3. 4,000
 - ☒ 4. 4,050

Q.2 In November 2024, the Union Cabinet approved which of the following new Central Sector schemes that seeks to provide financial support to meritorious students by providing education loan upto ₹7.5 lakhs with a 75% credit guarantee by the Government of India?

- Ans**
- ☒ 1. PM VidyaDhan
 - ☒ 2. PM Vidyalaxmi
 - ☒ 3. PM ShikshaDhan
 - ☒ 4. PM Shikshalaxmi

Q.3 In a certain code language, 'RIFE' is coded as '3647' and 'FORE' is coded as '6438'. What is the code for 'O' in the given code language?

- Ans**
- ☒ 1. 4
 - ☒ 2. 3
 - ☒ 3. 8
 - ☒ 4. 6

Q.4 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

ADI EHM ILQ MPU ?

- Ans**
- ☒ 1. QTY
 - ☒ 2. TYQ
 - ☒ 3. QYT
 - ☒ 4. TQY

Q.5 An imaginary straight line passing through the pole and the centre of curvature of a spherical mirror is called as _____.

- Ans**
- ☐ 1. incident ray
 - ☐ 2. emergent ray
 - ☒ 3. principal axis
 - ☐ 4. reflected ray

Q.6 The electric power consumed by a resistor of resistance R , carrying current I , is _____.

- Ans**
- ☐ 1. IR
 - ☒ 2. I^2R
 - ☐ 3. I/R
 - ☐ 4. IR^2

Q.7 Zinc metal reacts with sodium hydroxide to produce _____.

- Ans**
- ☒ 1. sodium zincate
 - ☐ 2. zinc hydroxide
 - ☐ 3. sodium hydride
 - ☐ 4. zinc oxide

Q.8 XZYU is related to NLOK in a certain way based on the English alphabetical order. In the same way, USVR is related to KILH. To which of the following options is QORN related, following the same logic?

- Ans**
- ☐ 1. HEDG
 - ☒ 2. GEHD
 - ☐ 3. GEDH
 - ☐ 4. HEGD

Q.9 Which Indian legendary sportsperson became the first Asian man to be inducted into the Tennis Hall of Fame?

- Ans**
- ☒ 1. Leander Paes
 - ☐ 2. Mahesh Bhupati
 - ☐ 3. Ramanathan Krishnan
 - ☐ 4. Rohan Bopanna

Q.10 The value of universal gravitational constant is _____.

- Ans**
- ☐ 1. $6.7 \text{ N m}^2 \text{ kg}^{-2}$
 - ☐ 2. $5 \times 10^{-1} \text{ N m}^2 \text{ kg}^{-2}$
 - ☐ 3. $1 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$
 - ☒ 4. $6.7 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$

Q.11 Pradnya invests ₹2,00,000 in the name of her daughter, who is 16 years old, in a scheme that pays compound interest at a rate of 8% per annum, compounded annually. What will be the total amount due to the daughter when she becomes 18 years old?

- Ans**
- ☐ 1. ₹2,52,150
 - ☐ 2. ₹2,35,850
 - ☐ 3. ₹2,51,250
 - ☒ 4. ₹2,33,280

Q.12 In a certain code language, 'AMBER' is coded as '79612' and 'UMBRA' is coded as '12659'. What is the code for 'U' in the given code language?

- Ans**
- ✓ 1. 5
 - ✗ 2. 1
 - ✗ 3. 2
 - ✗ 4. 9

Q.13 The process of fermentation involves the conversion of sugars into which of the following compounds?

- Ans**
- ✗ 1. Methane
 - ✗ 2. Ethene
 - ✗ 3. Ethanoic acid
 - ✓ 4. Ethanol

Q.14 The LCM of the numbers 5, 12.5 and 0.05 is:

- Ans**
- ✓ 1. 25
 - ✗ 2. 12.5
 - ✗ 3. 125
 - ✗ 4. 1.25

Q.15 Spores in Rhizopus are present in blobs, which are known as:

- Ans**
- ✗ 1. buds
 - ✗ 2. fruiting bodies
 - ✗ 3. sacs
 - ✓ 4. sporangia

Q.16 Which of the following cells have dendrites and axons?

- Ans**
- ✓ 1. Nerve cells
 - ✗ 2. Fibres
 - ✗ 3. Red blood cells
 - ✗ 4. White blood cells

Q.17 What is the name of the connective tissue that connects two bones to each other?

- Ans**
- ✗ 1. Cartilage
 - ✗ 2. Adipose tissue
 - ✓ 3. Ligament
 - ✗ 4. Tendon

Q.18 What is the SI unit of pressure?

- Ans**
- ✗ 1. N m^{-1}
 - ✗ 2. N
 - ✗ 3. N m
 - ✓ 4. N m^{-2}

Q.19 Which of the following functions is NOT regulated by the medulla in the hind brain?

- Ans**
- ☒ 1. Vomiting control
 - ☒ 2. Regulation of hearing
 - ☒ 3. Blood pressure regulation
 - ☒ 4. Salivary regulation

Q.20 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some tablets are laptops.

All laptops are desktops.

Conclusions:

(I) Some desktops are tablets.

(II) No desktops are tablets.

- Ans**
- ☒ 1. Only conclusion (II) follows
 - ☒ 2. Neither conclusion (I) nor (II) follows
 - ☒ 3. Only conclusion (I) follows
 - ☒ 4. Both conclusions (I) and (II) follow

Q.21 When iron filings are sprinkled around a magnet, they form a pattern. What does this pattern represent?

- Ans**
- ☒ 1. Both electric and magnetic field lines
 - ☒ 2. Magnetic field lines
 - ☒ 3. Electric field lines
 - ☒ 4. Neither electric nor magnetic field lines

Q.22 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

16, 27, 38, 49, 60, ?

- Ans**
- ☒ 1. 73
 - ☒ 2. 72
 - ☒ 3. 71
 - ☒ 4. 70

Q.23 Which of the following is produced when acid reacts with a base?

- Ans**
- ☒ 1. Salt and hydrogen ion
 - ☒ 2. Only water
 - ☒ 3. Salt and water
 - ☒ 4. Salt and hydrogen gas

Q.24 Who among the following assumed charge as Officer on Special Duty (Defence Secretary-designate) on August 2024?

- Ans**
- ☒ 1. Arun Kumar Sharma
 - ☒ 2. Rajeev Kumar
 - ☒ 3. Sandeep Chakravorty
 - ☒ 4. Rajesh Kumar Singh

Q.25 Ajit starts from point A and drives 6 km towards North. He then takes two simultaneous left turns and drives 2 km each. He then takes a right turn and drives 3 km. He then takes a left turn and drives 2 km. He takes a final left turn and drives 5 km to reach a point B. How far (shortest distance) and towards which direction should he drive in order to reach Point A again? (All turns are 90 degrees turns only unless specified.)

- Ans**
- ☒ 1. 5 km West
 - ☒ 2. 2 km North
 - ☒ 3. 3 km South
 - ☒ 4. 2 km South

Q.26 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷', and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

78 A 13 B 15 D 20 C 30 =?

- Ans**
- ☒ 1. 90
 - ☒ 2. 80
 - ☒ 3. 100
 - ☒ 4. 110

Q.27 Seven people, A, B, E, F, P, Q and R, are sitting in a row, facing north. No one sits to the right of F. Only three people sit between F and E. Only two people sit between E and P. A sits third to the left of R. Q sits to the immediate right of R. How many people sit between B and P?

- Ans**
- ☒ 1. One
 - ☒ 2. Three
 - ☒ 3. Four
 - ☒ 4. Two

Q.28 An atom has 17 protons, 18 neutrons, and 17 electrons. What is its mass number?

- Ans**
- ☒ 1. 35
 - ☒ 2. 34
 - ☒ 3. 24
 - ☒ 4. 18

Q.29 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(32, 78, 93)

(29, 75, 90)

- Ans**
- ☒ 1. (38, 84, 99)
 - ☒ 2. (43, 79, 94)
 - ☒ 3. (25, 71, 76)
 - ☒ 4. (35, 81, 92)

Q.30 Which of the options represents the correct and balanced chemical equation for the reaction between a metallic oxide and an acid?

$\text{CuO} + \text{HCl} \rightarrow \text{ ______ } + \text{ ______ }$

- Ans**
- ☒ 1. $\text{CuO} + 2\text{HCl} \rightarrow \text{CuCl}_2 + \text{O}_2$
 - ☒ 2. $\text{CuO} + 2\text{HCl} \rightarrow \text{CuCl}_2 + \text{H}_2\text{O}$
 - ☒ 3. $\text{CuO} + \text{HCl} \rightarrow \text{CuOH} + \text{HCl}$
 - ☒ 4. $\text{CuO} + \text{HCl} \rightarrow \text{CuCl} + \text{H}_2$

Q.31 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 4 0 8 3 5 6 2 1 6 4 1 4 3 8 7 9 0 6 9 3 4 1 3 0 2 7 1 8 8 9 (Right)

How many such odd digits are there, each of which is immediately preceded by an even digit and also immediately followed by an odd digit?

- Ans**
- ☒ 1. 6
 - ☒ 2. 4
 - ☒ 3. 5
 - ☒ 4. 3

Q.32 Which of the following statements is/are INCORRECT?

(i) The transport of insoluble product of photosynthesis is known as translocation.

(ii) Respiration is the evaporative loss of water through stomata.

(iii) Photosynthesis is the process by which autotrophs take in substances from outside and in the absence of sunlight convert them into stored forms of energy.

- Ans**
- ☒ 1. Only (i) and (ii)
 - ☒ 2. Only (ii) and (iii)
 - ☒ 3. (i), (ii) and (iii)
 - ☒ 4. Only (i)

Q.33 To raise awareness on the safe use of digital payment services and prevent scams, which of the following institution of India launched a UPI Safety Awareness Campaign 'Main Moorkh Nahi Hoon'?

- Ans**
- ☒ 1. National Payments Corporation of India (NPCI)
 - ☒ 2. Reserve Bank of India (RBI)
 - ☒ 3. Indian Cybercrime Coordination Centre (I4C)
 - ☒ 4. Data Security Council of India (DSCI)

Q.34 A scanner costs ₹7,000 less than a printer. If the cost of the printer is twice the cost of the scanner, then the cost of the scanner is:

- Ans**
- ☒ 1. ₹7,500
 - ☒ 2. ₹14,000
 - ☒ 3. ₹6,000
 - ☒ 4. ₹7,000

Q.35 If the volume of a cube is 729 cm^3 , then the measure of the main diagonal of the cube will be:

- Ans**
- ☒ 1. $7\sqrt{3} \text{ cm}$
 - ☒ 2. $9\sqrt{3} \text{ cm}$
 - ☒ 3. 7 cm
 - ☒ 4. 9 cm

Q.36 How much amount did the Board of Control for Cricket in India Secretary Jay Shah provide to the Indian Olympic Association (IOA) as a support for the Indian contingent for Paris Olympics 2024?

- Ans**
- ☒ 1. 14.5 crore
 - ☒ 2. 8.5 crore
 - ☒ 3. 12.5 crore
 - ☒ 4. 10.5 crore

Q.37 If $AB = k + 3$, $BC = 2k$ and $AC = 5k - 5$, then for what value of 'k' does B lie on AC?

- Ans**
- ✓ 1. 4
 - ✗ 2. 8
 - ✗ 3. 2
 - ✗ 4. 3

Q.38 which of the following is/ are correct related to Adrenalin hormone ?

- (i) Heart beats faster
- (ii) Breathing rate increases
- (iii) Decreases blood pressure

- Ans**
- ✗ 1. Only (ii) and (iii)
 - ✗ 2. (i), (ii) and (iii)
 - ✓ 3. Only (i) and (ii)
 - ✗ 4. Only (i) and (iii)

Q.39 Who among the following was awarded the 'Best Film Critic' for his work in Hindi language as part of the National Film Awards 2022 in 2024?

- Ans**
- ✗ 1. Anirudha Bhattacharjee
 - ✓ 2. Deepak Dua
 - ✗ 3. Parthiv Dhar
 - ✗ 4. Mithun Chakraborty

Q.40 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All hands are legs.

No leg is an eye.

Conclusions:

I. All legs are hands.

II. No hand is an eye.

- Ans**
- ✗ 1. Both conclusions I and II follow
 - ✗ 2. Neither conclusion I nor II follows
 - ✓ 3. Only conclusion II follows
 - ✗ 4. Only conclusion I follows

Q.41 Two trains of length 220 m and 280 m are running towards each other on parallel lines at 42 km/h and 30 km/h, respectively. In how much time will they be clear of each other from the moment they meet?

- Ans**
- ✗ 1. 21 sec
 - ✓ 2. 25 sec
 - ✗ 3. 10 sec
 - ✗ 4. 20 sec

Q.42 Which of the following is NOT a function of blood?

- Ans
- ☐ 1. Transports hormones
 - ☐ 2. Transports waste materials
 - ☒ 3. Helps in the synthesis of starch
 - ☐ 4. Transports gases

Q.43 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$2\ B\ 18\ D\ 20\ A\ 4\ C\ 15\ =\ ?$$

- Ans
- ☐ 1. 47
 - ☒ 2. 46
 - ☐ 3. 45
 - ☐ 4. 48

Q.44 Identify the INCORRECT statement about regeneration.

- Ans
- ☐ 1. These specialist cells multiply rapidly and produce a large number of new cells.
 - ☐ 2. Specialised cells are responsible for regeneration.
 - ☐ 3. Hydra and Planaria show regeneration mode of reproduction
 - ☒ 4. Amoeba exhibit regeneration.

Q.45 In phloem, which of the following cells are dead cells?

- Ans
- ☐ 1. Sieve cells
 - ☐ 2. Companion cells
 - ☒ 3. Phloem fibres
 - ☐ 4. Phloem parenchyma

Q.46 The tube which grows out of pollen grain to reach the ovary, travels through the:

- Ans
- ☐ 1. petal
 - ☐ 2. filament
 - ☒ 3. style
 - ☐ 4. anther

Q.47 Heating of ethanol at 443 K with excess concentrated sulphuric acid yields which of the following?

- Ans
- ☒ 1. Ethene
 - ☐ 2. Acetic acid
 - ☐ 3. Ether
 - ☐ 4. Ethane

Q.48 In which state did Prime Minister Narendra Modi inaugurate India's first modern, self-sufficient gaushala named Adarsh Gaushala?

- Ans
- ☐ 1. Rajasthan
 - ☐ 2. Uttar Pradesh
 - ☒ 3. Madhya Pradesh
 - ☐ 4. Bihar

Q.49 What is the sum of the deviations of the values of the data set 5, 6, 7, 9, 10, 12 and 14, from the mean of the values given in the same data set?

- Ans**
- ☐ 1. 1
 - ☐ 2. 2
 - ☐ 3. -1
 - ☒ 4. 0

Q.50 If $9 : 12 :: 12 : k$, then find the value of $k + 1$.

- Ans**
- ☐ 1. 15
 - ☐ 2. 18
 - ☒ 3. 17
 - ☐ 4. 16

Q.51 If a force of 2 N gives a mass m_1 , an acceleration of 8 m s^{-2} and a mass m_2 , an acceleration of 15 m s^{-2} , what will be the total mass if both the masses were tied together?

- Ans**
- ☐ 1.
 - ☐ 2. $\frac{3}{10} \text{ kg}$
 - ☒ 3. $\frac{23}{60} \text{ kg}$
 - ☐ 4. $\frac{10}{40} \text{ kg}$

Q.52 The list price of an article is ₹1,200 and a discount of 15% is offered on the list price. The selling price of the article is:

- Ans**
- ☐ 1. ₹1,120
 - ☒ 2. ₹1,020
 - ☐ 3. ₹1,080
 - ☐ 4. ₹1,140

Q.53 The gravitational potential energy of an object of mass 'm' raised through a height 'h' from the earth's surface is given by _____.

- Ans**
- ☐ 1. $ma v$
 - ☐ 2. ma
 - ☐ 3. $mg v$
 - ☒ 4. mgh

Q.54 If 'I' stands for '+', 'J' stands for '×', 'K' stands for '+', and 'L' stands for '-', what will be come in place of the question mark '?' in the following equation?

$$148 \text{ I } 104 \text{ L } 126 \text{ I } (76 \text{ K } 2) \text{ I } (11 \text{ J } 3) \text{ L } 55 = ?$$

- Ans**
- ☒ 1. 142
 - ☐ 2. 168
 - ☐ 3. 122
 - ☐ 4. 154

Q.55 If each vowel in the word PAINTER is changed to the nearest consonant succeeding it in the English alphabetical order and each consonant is changed to the nearest vowel succeeding it in English alphabetical order, then which of the following letters is repeated thrice in the new group of letters thus formed?

- Ans**
- ☐ 1. O
 - ☐ 2. F
 - ☐ 3. B
 - ☒ 4. U

Q.56 A body, starting from rest, falls from a building and reaches the ground in 2 secs. What will be the velocity of the body when it reaches the ground? (Acceleration due to gravity = 10 ms^{-2})

- Ans**
- ☐ 1. 15 m/s
 - ☐ 2. 5 m/s
 - ☐ 3. 10 m/s
 - ☒ 4. 20 m/s

Q.57 Who among the following individuals from India was one of the six recipients of the 2024 Planet Earth Awards?

- Ans**
- ☐ 1. RK Pachauri
 - ☐ 2. Sunita Narain
 - ☐ 3. Vandana Shiva
 - ☒ 4. S Faizi

Q.58 A sum when invested at $12\frac{1}{2}\%$ simple interest per annum amounts to ₹8,250 after 2 years. What is the simple interest in 1 year?

- Ans**
- ☐ 1. ₹1,650
 - ☒ 2. ₹825
 - ☐ 3. ₹910
 - ☐ 4. ₹1,700

Q.59 

- Ans**
- ☐ 1. To conserve energy
 - ☐ 2. To maintain balance
 - ☒ 3. In immediate response to some stimulus
 - ☐ 4. In fear

Q.60 When a body of mass m is raised to a height H against gravity, the potential energy of the body is:

- Ans**
- ☐ 1. decreased by an amount $mgH/2$
 - ☒ 2. increased by an amount mgH
 - ☐ 3. decreased by an amount mgH
 - ☐ 4. increased by an amount $mgH/2$

Q.61 D, E, F, G, L, M and N are sitting around a circular table facing the centre. E sits to the immediate right of D. Only three people sit between E and L when counted from the left of E. Only three people sit between D and G when counted from the left of D. N sits to the immediate right of M.

How many people sit between F and M when counted from the left of M?

- Ans**
- ☐ 1. Four
 - ☒ 2. Two
 - ☐ 3. Three
 - ☐ 4. One

Q.62 Which organelle is the powerhouse of the cell?

- Ans**
- ☐ 1. Golgi apparatus
 - ☐ 2. Endoplasmic reticulum
 - ☒ 3. Mitochondria
 - ☐ 4. Plastids

Q.63 Which of the following elements is monoatomic?

- Ans
- ☐ 1. Hydrogen
 - ☒ 2. Helium
 - ☐ 3. Nitrogen
 - ☐ 4. Oxygen

Q.64 SIDBI, in November 2024, signed a MoU with which of the following for strengthening the collaboration to support MSMEs through capacity building, credit facilities, and knowledge-sharing?

- Ans
- ☐ 1. Ecozen Solutions
 - ☐ 2. Reliance Industries
 - ☐ 3. Upcurve Business Services Pvt Ltd
 - ☒ 4. Peenya Industries Association

Q.65 A and B complete a work in 2 days. If A alone can do it in 4 days then, B alone can do 17-times of the same work in _____(days).

- Ans
- ☐ 1. 4
 - ☒ 2. 68
 - ☐ 3. 5
 - ☐ 4. 69

Q.66 Which of the following oxides is amphoteric in nature?

- Ans
- ☐ 1. Sodium peroxide
 - ☐ 2. Copper oxide
 - ☐ 3. Calcium oxide
 - ☒ 4. Aluminium oxide

Q.67 What was the theme of the first Asian Buddhist Summit, held in November 2024?

- Ans
- ☐ 1. Role of Buddha Dhamma in Strengthening World
 - ☒ 2. Role of Buddha Dhamma in Strengthening Asia
 - ☐ 3. Role of Buddha Dhamma in Maintaining World Peace Order
 - ☐ 4. Role of Buddha Dhamma in Establishing Global Peace

Q.68 The HCF of 45, 78 and 117 is:

- Ans
- ☒ 1. 3
 - ☐ 2. 9
 - ☐ 3. 5
 - ☐ 4. 7

Q.69 1 kilowatt is equal to _____.

- Ans
- ☒ 1. 1000 J s^{-1}
 - ☐ 2. 1000 J
 - ☐ 3. 1000 J s^{-2}
 - ☐ 4. 1000 J s

Q.70 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 114 :: 26 : Y

Ans ☒ 1. X = 42, Y = 84

☒ 2. X = 38, Y = 78

☒ 3. X = 31, Y = 72

☒ 4. X = 39, Y = 86

Q.71 Which of the following phenomena CANNOT be explained using the universal law of gravitation?

Ans ☒ 1. Firing of a gun

☒ 2. Tides

☒ 3. Motion of planets around the Sun

☒ 4. Motion of the moon around the earth

Q.72 Which of the following is the best example of a heterogeneous mixture?

Ans ☒ 1. Copper sulphate solution

☒ 2. Mixture of iron chloride and iron fillings

☒ 3. Sugar in water

☒ 4. Salt in water

Q.73 $\left(x + \frac{1}{x}\right)\left(x - \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4}\right)$

is equal to:

Ans ☒ 1. $x^{10} - \frac{1}{x^{10}}$

☒ 2. $x^4 - \frac{1}{x^4}$

☒ 3. $x^6 - \frac{1}{x^6}$

☒ 4. $x^8 - \frac{1}{x^8}$

Q.74 How many water molecules are present in plaster of Paris?

Ans ☒ 1. One molecule of water

☒ 2. Zero molecules of water

☒ 3. Half molecules of water

☒ 4. Three molecules of water

Q.75 A and B can do a piece of work in 12 days and 16 days, respectively. Both work for 3 days and then A goes away. Find how long will B take to complete the remaining work?

Ans ☒ 1. 9 days

☒ 2. 12 days

☒ 3. 15 days

☒ 4. 10 days

Q.76 Which of the following compounds is used as an antacid?

- Ans**
- ☐ 1. Calcium oxide
 - ☒ 2. Magnesium hydroxide
 - ☐ 3. Sodium chloride
 - ☐ 4. Calcium hydroxide

Q.77 The value of a machine depreciates at the rate of 10% per annum. If its present value is ₹1,62,000, then what will be its worth after 2 years?

- Ans**
- ☒ 1. ₹1,31,220
 - ☐ 2. ₹1,26,860
 - ☐ 3. ₹1,32,860
 - ☐ 4. ₹1,27,760

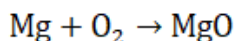
Q.78 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

MOVE - MOVE - EVOM

EXAM - EXAM - MAXE

- Ans**
- ☐ 1. DRAW - DRAW - RAWD
 - ☒ 2. READ - READ - DAER
 - ☐ 3. MOST - OMST - TOSM
 - ☐ 4. NOSE - NSOE - ESON

Q.79 Identify the balanced chemical equation for the following reaction.



- Ans**
- ☐ 1. $2\text{Mg} + \frac{3}{2}\text{O}_2 \rightarrow 3\text{MgO}$
 - ☒ 2. $\text{Mg} + \frac{1}{2}\text{O}_2 \rightarrow \text{MgO}$
 - ☐ 3. $2\text{Mg} + \frac{1}{2}\text{O}_2 \rightarrow 2\text{MgO}$
 - ☐ 4. $\text{Mg} + \frac{3}{2}\text{O}_2 \rightarrow \text{MgO}$

Q.80 Simplify $\frac{2.46 \times 2.46 - 1.46 \times 1.46}{2.46 - 1.46}$ and select the most appropriate fraction.

- Ans**
- ☐ 1. $\frac{392}{10000}$
 - ☐ 2. $\frac{392}{10}$
 - ☐ 3. $\frac{392}{1000}$
 - ☒ 4. $\frac{392}{100}$

Q.81 Which of the following organisms reproduce by spore formation?

- Ans**
- ☐ 1. Hydra
 - ☐ 2. Leishmania
 - ☒ 3. Rhizopus
 - ☐ 4. Earthworm

Q.82 The value of $(\sec A + \tan A)(1 - \sin A)$ is:

- Ans**
- ☐ 1. $\cot A$
 - ☒ 2. $\cos A$
 - ☐ 3. $\tan A$
 - ☐ 4. $\sin A$

Q.83 What is the momentum p , of an object of mass m , moving with a velocity v ?

- Ans**
- ☐ 1. $P = v m^{-1}$
 - ☒ 2. $P = m v$
 - ☐ 3. $P = m v^{-2}$
 - ☐ 4. $p = (mv)^{-2}$

Q.84 Archana can eat 21 litchis in 60 minutes. She wants to know how many minutes it would take her to eat 35 litchis at the same pace.

- Ans**
- ☐ 1. 120 minutes
 - ☐ 2. 90 minutes
 - ☐ 3. 80 minutes
 - ☒ 4. 100 minutes

Q.85 Which of the following factors does NOT affect the rate of evaporation?

- Ans**
- ☐ 1. Surface area of the liquid
 - ☐ 2. Humidity of the surrounding air
 - ☐ 3. Temperature of the liquid
 - ☒ 4. Colour of the liquid

Q.86 If the ratio of the volume of two spheres is 1:8, then the ratio of their surface area is:

- Ans**
- ☐ 1. 1:2
 - ☐ 2. 1:6
 - ☒ 3. 1:4
 - ☐ 4. 1:8

Q.87 Given below is a cause followed by possible effects numbered I, II and III. Read the cause carefully and decide which of the three can be a/the possible effect(s).

Cause:

The truckers' strike entered its 6th day today in State X, as they protested against the increase in diesel prices.

Effects:

(I) Supply of fruits and vegetables from neighbouring states has dropped drastically in the wholesale markets in the last week across many cities in State X.

(II) Demand for diesel vehicles has been steadily increasing in State X despite an increase in diesel prices.

(III) The auto rickshaw union in City Z has declared an increase in the starting fares for autos for 48 hours starting tomorrow morning at 6 a.m.

- Ans**
- ☒ 1. Only I can be a possible effect
 - ☐ 2. Only II can be a possible effect
 - ☐ 3. Both I and II can be the possible effects
 - ☐ 4. Both II and III can be the possible effects

Q.88 Which of the following device is governed by Flemming's Left Hand Rule

- Ans**
- ☐ 1. Electric Geyser
 - ☐ 2. Electric Bulb
 - ☒ 3. Electric motor
 - ☐ 4. Electric Iron

Q.89 Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

(Left) 2 7 & 3 Ω 9 # 1 * £ & % 4 6 @ 8 S 5 (Right)

If all the symbols are dropped from the series, which of the following will be fifth from the right?

- Ans**
- ☐ 1. 3
 - ☐ 2. 9
 - ☐ 3. 4
 - ☒ 4. 1

Q.90 Triveni's salary was first decreased by 16% and subsequently increased by 25%. The net percentage change in her salary was:

- Ans**
- ☒ 1. 5% increase
 - ☐ 2. 10% increase
 - ☐ 3. 10% decrease
 - ☐ 4. 5% decrease

Q.91 What least natural number must be added to 6072 to make it a perfect square?

- Ans**
- ☐ 1. 16
 - ☒ 2. 12
 - ☐ 3. 10
 - ☐ 4. 6

Q.92 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

JMP, LOR, NQT, PSV, ?

- Ans**
- ☒ 1. RUX
 - ☐ 2. URX
 - ☐ 3. UXR
 - ☐ 4. RXU

Q.93 Mendel used a number of contrasting visible characters of garden peas. Match the last of the following with Which one of the following options appropriately fills the below blank space?

- A. Round / Wrinkled seeds
- B. Tall / Short plants
- C. White / _____ flowers

Ans ☒ 1. Yellow
☒ 2. Pink
☒ 3. Green
☒ 4. Violet

Q.94 If a 3-digit number 2y5 is divisible by 11, then the value of digit 'y' is:

Ans ☒ 1. 3
☒ 2. 2
☒ 3. 7
☒ 4. 9

Q.95 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group ?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

Ans ☒ 1. RYT
☒ 2. JQK
☒ 3. NUP
☒ 4. FMH

Q.96 The ratio between the present ages of Amit and Amita is 7 : 5, respectively. The ratio between Amit's age 5 years ago and Amita's age 5 years hence is 1 : 1. What is the ratio between Amit's age 5 years hence and Amita's age 5 years ago?

Ans ☒ 1. 1 : 2
☒ 2. 2 : 3
☒ 3. 3 : 2
☒ 4. 2 : 1

Q.97 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ☒ 1. TQW
☒ 2. QNT
☒ 3. JGM
☒ 4. NKR

Q.98 In a certain code language,
'P + Q' means 'P is the son of Q',
'P - Q' means 'P is the wife of Q',
'P x Q' means 'P is the husband of Q' and
'P ÷ Q' means 'P is the brother of Q',
How is A related to E if 'A + B - C + D x E'?

- Ans**
- ☐ 1. Brother
 - ☐ 2. Son
 - ☐ 3. Daughter's son
 - ☒ 4. Son's son

Q.99 The cost price of a toy is ₹210. What should be its MRP so that after a discount of 5% the shopkeeper gains 90%?

- Ans**
- ☐ 1. ₹400
 - ☐ 2. ₹480
 - ☒ 3. ₹420
 - ☐ 4. ₹450

Q.100 Kevin ranked 15th from the top and 20th from the bottom in his class. How many students are there in his class?

- Ans**
- ☐ 1. 35
 - ☐ 2. 33
 - ☐ 3. 36
 - ☒ 4. 34

2024/12/30-22:46:34



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS
सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iON Digital Zone iDZ Trinity 2
Test Date	30/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 When sodium hydroxide reacts with water, which of the following products is/are formed?

Ans ☒ 1. Only $\text{OH}^-(\text{aq})$ ions

☒ 2. Both $\text{Na}^+(\text{aq})$ and Cl_2

☒ 3. Only $\text{Na}^+(\text{aq})$ ions

☒ 4. Both $\text{Na}^+(\text{aq})$ and $\text{OH}^-(\text{aq})$ ions

Q.2 Which of the following statements is true for the appliances used in domestic circuits:

Ans ☒ 1.

Heavy appliances like AC, Geyser are connected in series and light appliances like bulbs, tubelights are connected in parallel

☒ 2. All the appliances are connected in series

☒ 3.

Heavy appliances like AC, Geyser are connected in parallel and light appliances like bulbs, tubelights are connected in series

☒ 4. All the appliances are connected in parallel

Q.3 All 37 people are standing in a row, facing north. Arihant is 14th from the right end while Chery is 21st from the left end. How many people are there between Arihant and Chery?

Ans ☒ 1. 3

☒ 2. 6

☒ 3. 5

☒ 4. 2

Q.4 What is the simple form of protein?

Ans ☒ 1. Glucose

☒ 2. Fatty acid

☒ 3. Amino acid

☒ 4. Glycerol

Q.5 The cost incurred by Manjit to produce an item in the factory was ₹2,000. He had to spend 10% of the production cost incurred on the item in the factory to transport it to the showroom. He sold the item from the showroom at a price that was 15% above the total cost incurred by Manjit in the production and transportation of the item. What was the price at which Manjit sold the item from the showroom?

- Ans**
- ☐ 1. ₹2,300
 - ☐ 2. ₹2,250
 - ☐ 3. ₹2,500
 - ☒ 4. ₹2,530

Q.6 Which of the following statements is INCORRECT about the use of washing soda?

- Ans**
- ☐ 1. It is used for removing permanent hardness of water.
 - ☐ 2. Sodium carbonate can be used as a cleaning agent for domestic purposes.
 - ☒ 3. It is not used in the paper industry.
 - ☐ 4. It is used in the manufacture of sodium compounds such as borax.

Q.7 If $64 : x :: x : 169$, and $x > 0$, find the value of x .

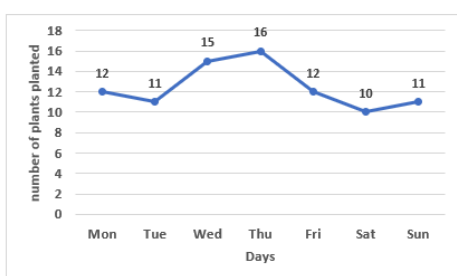
- Ans**
- ☐ 1. 112
 - ☐ 2. 96
 - ☒ 3. 104
 - ☐ 4. 108

Q.8 A can do a piece of work in 4 days. B can do it in 20 days. With the assistance of C, they completed the work in 2 days. C alone can do it in _____ days.

- Ans**
- ☐ 1. 4
 - ☐ 2. 7
 - ☒ 3. 5
 - ☐ 4. 6

Q.9 Study the given graph and answer the question that follows.

The line graph shows the number of plants planted by a student during the week.



What is the ratio of the number of plants planted on Friday to the number of plants planted on Saturday?

- Ans**
- ☐ 1. 1 : 9
 - ☒ 2. 6 : 5
 - ☐ 3. 2 : 5
 - ☐ 4. 7 : 9

Q.10 Which of the following pairs is correct in terms of pH values?

(a) Tooth decay in humans: pH of mouth > 5.5

(b) pH range of human body: 7.0 to 7.8

(c) Acid rain: pH of rain water > 8

Ans ✓ 1. Only (b) is correct.

✗ 2. Only (c) is correct.

✗ 3. Only (a) is correct.

✗ 4. (a), (b) and (c) are correct.

Q.11 Which of the following is least reactive?

Ans ✗ 1. Na

✗ 2. Ca

✗ 3. K

✓ 4. Mg

Q.12 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All planets are rocks.

All rocks are forests.

Conclusions:

(I) At least some rocks are planets.

(II) All planets are forests.

Ans ✓ 1. Both conclusions I and II follow

✗ 2. Neither conclusion I nor II follows

✗ 3. Only conclusion I follows

✗ 4. Only conclusion II follows

Q.13 In a certain code language,

'P + Q' means 'P is the daughter of Q',

'P - Q' means 'P is the wife of Q',

'P x Q' means 'P is the son of Q' and

'P ÷ Q' means 'P is the husband of Q'.

How is A related to E if 'A + B - C x D ÷ E'?

Ans ✗ 1. Daughter

✗ 2. Daughter's daughter

✓ 3. Son's daughter

✗ 4. Sister

Q.14 In an electric circuit, the device that acts as a variable resistor is called _____.

- Ans**
- ☒ 1. rheostat
 - ☐ 2. ammeter
 - ☐ 3. voltmeter
 - ☐ 4. galvanometer

Q.15 OLQN is related to URWT in a certain way based on the English alphabetical order. In the same way, LINK is related to ROTQ. To which of the following options is IFKH related, following the same logic?

- Ans**
- ☐ 1. OLNQ
 - ☒ 2. OLQN
 - ☐ 3. LONQ
 - ☐ 4. LOQN

Q.16 Which of the following substances is NOT selectively reabsorbed as the urine flows along the tubules?

- Ans**
- ☐ 1. Amino acids
 - ☐ 2. Glucose
 - ☒ 3. Urea
 - ☐ 4. Salts

Q.17 The volume of a cube of side $6xyz^2$ is:

- Ans**
- ☐ 1. $26xyz^2$
 - ☐ 2. $216x^3y^3z^3$
 - ☐ 3. $36xyz^2$
 - ☒ 4. $216x^3y^3z^6$

Q.18 A father's age is seven times that of his son's age. Three years from now, the age of the father will be five times that of his son's age. After how many years will their combined age be 62 years?

- Ans**
- ☐ 1. 3 years
 - ☐ 2. 5 years
 - ☒ 3. 7 years
 - ☐ 4. 6 years

Q.19 In which organelle of the plant cells does photosynthesis take place?

- Ans**
- ☐ 1. Mitochondria
 - ☐ 2. Nucleus
 - ☐ 3. Ribosome
 - ☒ 4. Chloroplast

Q.20 The curved surface area of a right circular cylinder is 616 cm^2 and the area of its base is 38.5 cm^2 . What is the volume (in cm^3) of the cylinder? (Use $\pi = \frac{22}{7}$)

- Ans**
- ☒ 1. 1078
 - ☐ 2. 1155
 - ☐ 3. 1408
 - ☐ 4. 1243

Q.21 Select the INCORRECT pair related to digestive glands and their enzymes.

- Ans
- ☐ 1. Gastric gland – pepsin
 - ☐ 2. Pancreas – pancreatic juice
 - ☐ 3. Liver – bile juice
 - ☒ 4. Salivary gland – trypsin

Q.22 Study the given table and answer the question that follows.

The table shows the demand of different shoe sizes as obtained in a survey.

Shoe size	Number of pairs demanded
5	44
6	48
7	58
8	46
9	39
10	37

Find the modal size of shoes demanded that one can obtain from the survey.

- Ans
- ☐ 1. 6
 - ☐ 2. 9
 - ☐ 3. 5
 - ☒ 4. 7

Q.23 The correct relation between charge(Q) following through a conductor, time(t) for which the charge follows and the current (I) following through the conductor is:

- Ans
- ☐ 1. $I = Qt$
 - ☐ 2. $I = Q^2 t$
 - ☒ 3. $I = \frac{Q}{t}$
 - ☐ 4. $I = Q t^2$

Q.24 What will happen when a plant cell is put in a medium having higher water concentration than the cell?

- Ans
- ☐ 1. It will likely shrink
 - ☐ 2. It will not show any change
 - ☒ 3. It will likely swell
 - ☐ 4. It will burst

Q.25 Different types of permanent tissues arise as a result of _____.

- Ans
- ☒ 1. Differentiation
 - ☐ 2. Germination
 - ☐ 3. Elongation
 - ☐ 4. Vegetative Propagation

Q.26 In a certain code language, 'FOLD' is coded as '3579' and 'RAIL' is coded as '2456'. What is the code for 'L' in the given code language?

- Ans**
- ☐ 1. 7
 - ☐ 2. 6
 - ☐ 3. 4
 - ☒ 4. 5

Q.27 If each consonant in the word RHYMING is changed to a letter immediately succeeding it in the English alphabetical order and each vowel is changed to the letter immediately preceding it in the English alphabetical order, which of the following letters is repeated twice in the new group of letters thus formed?

- Ans**
- ☐ 1. S
 - ☐ 2. I
 - ☐ 3. O
 - ☒ 4. H

Q.28 If 'P' stands for '×', 'Q' stands for '+', 'R' stands for '-' and 'S' stands for '+', then the resultant of which of the following would be 75?

- Ans**
- ☒ 1. 13 P 5 R 2 P 6 P 3 S 24 S (44 Q 2)
 - ☐ 2. 13 S 5 S 2 P 6 P 3 R 24 R (44 R 2)
 - ☐ 3. 13 P 5 S 2 P 6 Q 3 S 24 R (44 Q 2)
 - ☐ 4. 13 R 5 S 2 P 6 P 3 S 24 R (44 P 2)

Q.29 Which of the following statements is/are correct regarding the Raigad Fort?

- (1) It is part of the 12 forts nominated for UNESCO World Heritage under the title "Maratha Military Landscapes of India" for 2024-25.
- (2) It was the capital of the most illustrious Maratha sovereign, nurtured by Chhatrapati Shivaji Maharaj.
- (3) Raigad, surrounded by valleys shaped by the Kal and Gandhari rivers, stands as an isolated massif without connections to neighbouring hills.

- Ans**
- ☐ 1. Only 1 and 2
 - ☐ 2. Only 2 and 3
 - ☐ 3. Only 1 and 3
 - ☒ 4. 1, 2 and 3

Q.30 A body undergoes a displacement of 2m on application of a constant force of 10N; the work done will be:

- Ans**
- ☐ 1. 10 J
 - ☒ 2. 20 J
 - ☐ 3. 2 J
 - ☐ 4. 0 J

Q.31 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 5 4 6 3 4 1 7 9 5 4 8 1 5 2 3 1 7 1 7 4 3 9 6 9 4 5 1 4 7 (Right)

How many such even digits are there, each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 3
 - ☐ 2. 6
 - ☐ 3. 1
 - ☒ 4. 5

Q.32 If PQRS is a rhombus such that $\angle PRQ = 40^\circ$, then $\angle PSQ$ is:

- Ans**
- ☐ 1. 60°
 - ☐ 2. 40°
 - ☐ 3. 45°
 - ☒ 4. 50°

Q.33 How does a plant move its leaves in response to touch?

- Ans**
- ☒ 1. By changing the amount of water in them
 - ☐ 2. By changing the amount of nucleic acid in them
 - ☐ 3. By changing the amount of lipid in them
 - ☐ 4. By changing the amount of protein in them

Q.34 The force experienced by a current carrying conductor in a magnetic field is maximum when the angle between the direction of current and the direction of magnetic field is

- Ans**
- ☒ 1. 90°
 - ☐ 2. 60°
 - ☐ 3. 45°
 - ☐ 4. 0°

Q.35 Select the INCORRECT statement related to tropism.

- Ans**
- ☐ 1. Geotropism – in response to the pull of earth or gravity
 - ☒ 2. Phototropism – movement towards water
 - ☐ 3. Hydrotropism – movement towards water
 - ☐ 4. Chemotropism – movement towards chemical

Q.36 Calculate the molecular mass of ammonia, NH_3 , using the provided atomic masses (Atomic mass of N = 14 u and H = 1 u).

- Ans**
- ☐ 1. 21 u
 - ☐ 2. 10 u
 - ☐ 3. 42 u
 - ☒ 4. 17 u

Q.37 Which of the following is NOT part of India's 12 forts nominated for UNESCO World Heritage under the title 'Maratha Military Landscapes of India' for 2024-25?

- Ans**
- ☐ 1. Raigad
 - ☐ 2. Rajgad
 - ☒ 3. Karnala Fort
 - ☐ 4. Salher

Q.38 Which of the following is obtained when dilute HCl is added to a beaker that contains copper oxide?

- Ans**
- ☐ 1. The blue-green colour of copper (III) chloride
 - ☒ 2. The blue-green colour of copper (II) chloride
 - ☐ 3. The red colour of copper (II) chloride
 - ☐ 4. The colourless solution of copper (II) chloride

Q.39 Which of the following elements is most likely to form a negative ion (anion)?

- Ans**
- ☐ 1. Sodium (Na)
 - ☐ 2. Aluminium (Al)
 - ☐ 3. Calcium (Ca)
 - ☒ 4. Chlorine (Cl)

Q.40 Which of the following is NOT a unicellular organism?

- Ans**
- ☒ 1. Fungi
 - ☐ 2. Bacteria
 - ☐ 3. Chlamydomonas
 - ☐ 4. Paramecium

Q.41 Which system has been inducted into the Indian Army's Corps of Army Air Defence to enhance defence capabilities and technology absorption?

- Ans**
- ☐ 1. Varunastra Control Unit
 - ☐ 2. Agni Command System
 - ☒ 3. Akashteer Command and Control System
 - ☐ 4. Prithvi Command and Control System

Q.42 A person spent ₹273 on buying a total of 50 packets of chips and biscuits. If the cost of each packet of chips is ₹6 and that of each biscuit packet is ₹5, then how many more biscuit packets than chips packets did he buy?

- Ans**
- ☐ 1. 5
 - ☐ 2. 3
 - ☐ 3. 6
 - ☒ 4. 4

Q.43 The value of $\frac{50 + 50 \cot^2 A}{25 + 25 \tan^2 A}$ is:

- Ans**
- ☐ 1. $2 \tan^2 A$
 - ☐ 2. $\frac{1}{2} \tan^2 A$
 - ☒ 3. $2 \cot^2 A$
 - ☐ 4. $\frac{1}{2} \cot^2 A$

Q.44 Kishore Jena became first javelin thrower from which state to represent India at the finals of the World Athletics Championship?

- Ans**
- ☐ 1. West Bengal
 - ☐ 2. Rajasthan
 - ☒ 3. Odisha
 - ☐ 4. Karnataka

Q.45 The value of

$$\frac{3}{7} + \frac{2}{7} + \frac{1}{14} - 3 = ?$$

Ans

✗ 1. $\frac{27}{14}$

✓ 2. $-\frac{31}{14}$

✗ 3. $\frac{13}{14}$

✗ 4. $-\frac{27}{14}$

Q.46 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

BEST - SBET - TSEB

ROLE - LROE - ELOR

Ans

✗ 1. WEST - WSET - TSEW

✗ 2. TANG - NTAG - ANG T

✗ 3. RATE - ARTE - EATR

✓ 4. DIVE - VDIE - EVID

Q.47 The centre of curvature of a concave mirror lies _____ the mirror, whereas it lies _____ the mirror for a convex mirror.

Ans

✗ 1. behind; behind

✓ 2. in front of; behind

✗ 3. in front of; in front of

✗ 4. behind; in front of

Q.48 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$22 \text{ B } 5 \text{ D } 12 \text{ A } 4 \text{ C } 6 = ?$$

Ans

✓ 1. 113

✗ 2. 111

✗ 3. 112

✗ 4. 114

Q.49 An amount is distributed among A, B and C in the ratio of 5 : 7 : 15. If A's share is ₹1,500, then the total amount is:

Ans

✗ 1. ₹4,200

✗ 2. ₹2,700

✗ 3. ₹5,400

✓ 4. ₹8,100

Q.50 The speed of a train is 90 km/h. What is the distance covered by it in 10 minutes?

Ans

✗ 1. 11 km

✗ 2. 13 km

✓ 3. 15 km

✗ 4. 5 km

Q.51 D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only two people sit between F and L when counted from the left of L. N sits third to the left of M. G sits to the immediate right of M. G sits second to the left of F. E is not an immediate neighbour of N. Who sits third to the right of D?

- Ans**
- ☐ 1. N
 - ☐ 2. F
 - ☐ 3. E
 - ☒ 4. G

Q.52 In a certain code language, 'HANKY' is coded as '56428' and 'SNAKY' is coded as '48725'. What is the code for 'H' in the given code language?

- Ans**
- ☐ 1. 2
 - ☐ 2. 4
 - ☒ 3. 6
 - ☐ 4. 8

Q.53 A sum of money doubles itself at a certain rate of compound interest in 12 years when the interest is compounded annually. In how many more years will it become eight times of itself?

- Ans**
- ☐ 1. 12
 - ☒ 2. 24
 - ☐ 3. 36
 - ☐ 4. 48

Q.54 Which of the following budgets announced the release of 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops?

- Ans**
- ☒ 1. Union Budget 2024-25
 - ☐ 2. Union Budget 2022-23
 - ☐ 3. Union Budget 2023-24
 - ☐ 4. Union Budget 2021-22

Q.55 The device used for measuring potential difference across the ends of a conductor is:

- Ans**
- ☐ 1. Battery
 - ☐ 2. Ammeter
 - ☐ 3. Galvanometer
 - ☒ 4. Voltmeter

Q.56 Find the simple interest on ₹5,000 as a sum borrowed at 4% per year rate of interest for 5 years.

- Ans**
- ☐ 1. ₹1,200
 - ☐ 2. ₹800
 - ☐ 3. ₹1,300
 - ☒ 4. ₹1,000

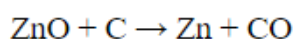
Q.57 If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 80?

- Ans**
- ☐ 1. 18 D 5 A 42 B 6 C 17
 - ☐ 2. 18 A 5 B 42 C 6 D 17
 - ☐ 3. 18 C 5 A 42 D 6 B 17
 - ☒ 4. 18 B 5 C 42 A 6 D 17

Q.58 Which of the following methods is NOT used for preventing iron from rusting?

- Ans
- ☐ 1. Chrome plating
 - ☒ 2. Heating
 - ☐ 3. Painting
 - ☐ 4. Galvanising

Q.59 Identify the substance that gets reduced in the given equation:



- Ans
- ☒ 1. ZnO
 - ☐ 2. CO
 - ☐ 3. C
 - ☐ 4. Zn

Q.60 The sperms produced in the testes are transported via the _____.

- Ans
- ☐ 1. seminal vesicle
 - ☐ 2. urinary bladder
 - ☒ 3. vas deferens
 - ☐ 4. Urethra

Q.61 Which mirror has negative focal length?

- Ans
- ☒ 1. Concave
 - ☐ 2. Plane mirror
 - ☐ 3. Convex
 - ☐ 4. Both convex and concave

Q.62 which city succeeded in hosting India's first-ever night street race in August 2023?

- Ans
- ☐ 1. Mumbai
 - ☒ 2. Chennai
 - ☐ 3. Kolkata
 - ☐ 4. Bengaluru

Q.63 In plants, after fertilisation the ovary develops into a _____.

- Ans
- ☒ 1. Fruit
 - ☐ 2. Flower
 - ☐ 3. Seedling
 - ☐ 4. Seed

Q.64 94% of the population of a village is 22,560. The total population of the village is:

- Ans
- ☐ 1. 25,640
 - ☒ 2. 24,000
 - ☐ 3. 32,256
 - ☐ 4. 24,936

Q.65 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

KNQ, LOR, MPS, NQT, ?

- Ans**
- ✓ 1. ORU
 - ✗ 2. ROU
 - ✗ 3. RUO
 - ✗ 4. OUR

Q.66 Which of the following quantities determine the rate of work performed by a machine?

- Ans**
- ✓ 1. Power
 - ✗ 2. Rate of change of velocity
 - ✗ 3. Total force exerted
 - ✗ 4. Total energy consumed

Q.67 The average of 7 consecutive numbers is 33. The greatest of these numbers is:

- Ans**
- ✗ 1. 28
 - ✓ 2. 36
 - ✗ 3. 33
 - ✗ 4. 30

Q.68 Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explain(s) the event/observation/information given in the statement.

Statement - Global warming is the unusually rapid increase in Earth's average surface temperature over the past century primarily due to the greenhouse gases released by people.

Reasons:

- I. Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions
- II. Deforestation contributes to global greenhouse gas emissions. It is responsible for approximately 25% of them.

- Ans**
- ✓ 1. Both I and II are possible reasons.
 - ✗ 2. Neither I nor II is a possible reason.
 - ✗ 3. Only II is a possible reason.
 - ✗ 4. Only I is a possible reason.

Q.69 Charlie starts from point A and drives 5 km towards the South. He then takes two simultaneous right turns and drives 3 km and 2 km, respectively. He takes a final right turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only, unless specified)

- Ans**
- ✗ 1. 2 km East
 - ✗ 2. 3 km South
 - ✗ 3. 2 km North
 - ✓ 4. 3 km North

Q.70 Which of the following diseases is/are a viral infection(s) transmitted through sexual contact?

- a. HIV
- b. Warts
- c. Gonorrhoea
- d. Syphilis

Ans ✓ 1. Only a and b

✗ 2. Only c

✗ 3. Only c and d

✗ 4. Only a

Q.71 Which of the following statements is/are correct regarding the liquid state of matter?

Statement I: Liquids have fixed volume but no fixed shape.

Statement II: The rate of diffusion of liquids is higher than that of solids.

Ans ✗ 1. Only statement II is correct.

✗ 2. Neither statement I nor II is correct.

✓ 3. Both statements I and II are correct.

✗ 4. Only statement I is correct.

Q.72 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✗ 1. BI – JS

✓ 2. SW – FM

✗ 3. TA – BK

✗ 4. ZG – HQ

Q.73 Which of the following is the melting point of ice?

Ans ✗ 1. 200.15 K

✓ 2. 273.15 K

✗ 3. 300.15 K

✗ 4. 373.15 K

Q.74 If the radius of a sphere is reduced by 50%, then the new volume will become _____ the original volume.

Ans ✓ 1. $\frac{1}{8}$ times

✗ 2. 4 times

✗ 3. 8 times

✗ 4. $\frac{1}{4}$ times

Q.75 The action of chlorine on dry Ca(OH)_2 produces which of the following?

Ans ✗ 1. Calcium oxide

✗ 2. Calcium chloride

✓ 3. Bleaching powder

✗ 4. Hydrochloric acid

Q.76 The sum of squares of two positive numbers is 145. If the square root of one of the numbers is 3, then find the other number.

- Ans**
- ☐ 1. 9
 - ☒ 2. 8
 - ☐ 3. 64
 - ☐ 4. 136

Q.77 Which state governor's Additional Secretary authored the book "Maa-Mother" which was launched by Law and Justice Minister Arjun Ram Meghwal in November 2024?

- Ans**
- ☒ 1. Kerala
 - ☐ 2. Rajasthan
 - ☐ 3. Tamil Nadu
 - ☐ 4. Maharashtra

Q.78 Work has the same unit as that of _____.

- Ans**
- ☐ 1. force
 - ☐ 2. acceleration
 - ☒ 3. energy
 - ☐ 4. momentum

Q.79 If each vowel in the word DIALECT is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order and then the group of letters thus formed is arranged in English alphabetical order, then which of the following letters will be third from the right?

- Ans**
- ☐ 1. E
 - ☐ 2. M
 - ☐ 3. F
 - ☒ 4. J

Q.80 What is the reason for the formation of a bud in Hydra?

- Ans**
- ☐ 1. Cell cycle
 - ☐ 2. Overgrowth of the whole body
 - ☒ 3. Repeated cell division at one specific site
 - ☐ 4. Mutation

Q.81 In November 2024, Centre for Development of Telematics (C-DOT) signed an agreement with which Indian Institute of Technology (IIT) for development of 'Millimeter Wave Transceiver for 5G Rural Connectivity', which aims to enable affordable broadband and mobile services across India?

- Ans**
- ☐ 1. IIT Madras
 - ☐ 2. IIT Bombay
 - ☐ 3. IIT Delhi
 - ☒ 4. IIT Roorkee

Q.82 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

681, 607, 533, 459, 385, ?

- Ans**
- ☐ 1. 329
 - ☒ 2. 311
 - ☐ 3. 354
 - ☐ 4. 345

Q.83 Surendra buys mangoes at the rate of 3 kg for ₹21 and sells them at 5 kg for ₹50. To earn ₹102 as profit, he must sell:

- Ans**
- ☐ 1. 56 kg
 - ☒ 2. 34 kg
 - ☐ 3. 26 kg
 - ☐ 4. 32 kg

Q.84 Which of the following numbers is divisible by all the natural numbers from 1 to 10 (both inclusive)?

- Ans**
- ☐ 1. 608
 - ☐ 2. 1000
 - ☐ 3. 504
 - ☒ 4. 2520

Q.85 Mechanical energy of a body includes _____.

- Ans**
- ☐ 1. heat energy only
 - ☒ 2. both potential energy and kinetic energy
 - ☐ 3. potential energy only
 - ☐ 4. kinetic energy only

Q.86 Two resistors of 2Ω each are connected in series to a battery of 4V. The current in Ampere flowing through the resistors will be:

- Ans**
- ☐ 1. $1/2$
 - ☐ 2. 2
 - ☐ 3. 4
 - ☒ 4. 1

Q.87 The marked price of an article is ₹100. If the article is sold at a discount of 25%, then the selling price of the article is:

- Ans**
- ☐ 1. ₹70
 - ☐ 2. ₹125
 - ☐ 3. ₹80
 - ☒ 4. ₹75

Q.88 A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits to the immediate left of E. Only three people sit between E and Q when counted from the right of E. Only one person sits between B and P when counted from the right of B. F sits to the immediate right of B. How many people sit between R and E when counted from the left of R?

- Ans**
- ☐ 1. Three
 - ☐ 2. One
 - ☐ 3. Two
 - ☒ 4. Four

Q.89 In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of :: ?

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

X : 44 :: 72 : Y

Ans ✓ 1. X = 68, Y = 46

✗ 2. X = 74, Y = 48

✗ 3. X = 62, Y = 34

✗ 4. X = 66, Y = 32

Q.90 Anil Pradhan, co-founder of NGO Young Tinker Foundation, working towards education in underserved areas, awarded with Rohini Nayyar Prize for Outstanding Contribution to Rural Development in 2024, belongs to which of the following states?

Ans ✗ 1. Assam

✗ 2. Arunachal Pradesh

✓ 3. Odisha

✗ 4. West Bengal

Q.91 A boy of weight 600 N climbs up a rope through a height of 10 m. He takes 20 s to accomplish this task. What is the power expended by him?

Ans ✗ 1. 200 W

✗ 2. 100 W

✗ 3. 150 W

✓ 4. 300 W

Q.92 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✗ 1. EID

✗ 2. MQL

✗ 3. OSN

✓ 4. IMG

Q.93 In some multicellular organisms, the body breaks up into smaller pieces upon maturation and each piece grows into a new organism. What is this known as?

Ans ✗ 1. Gamete formation

✓ 2. Fragmentation

✗ 3. Sexual reproduction

✗ 4. Budding

Q.94 A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for ₹3,200. With the help of C, they completed the work in 3 days. How much is to be paid to B?

Ans ✗ 1. ₹800

✗ 2. ₹1,400

✗ 3. ₹600

✓ 4. ₹1,200

Q.95 Which organisation conducted the study on background radiation levels in Kerala?

- Ans**
- ☐ 1. Ministry of Environment
 - ☒ 2. Bhabha Atomic Research Centre (BARC)
 - ☐ 3. Indian Space Research Organisation (ISRO)
 - ☐ 4. Geological Survey of India (GSI)

Q.96 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding /subtracting /multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(105, 35, 7)

(135, 45, 9)

- Ans**
- ☒ 1. (150, 50, 10)
 - ☐ 2. (115, 30, 6)
 - ☐ 3. (90, 25, 5)
 - ☐ 4. (120, 40, 12)

Q.97 Which of the following is a pair of co-prime numbers?

- Ans**
- ☐ 1. 363, 77
 - ☐ 2. 455, 49
 - ☐ 3. 52, 24
 - ☒ 4. 81, 16

Q.98 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EHL, GJN, ILP, KNR, ?

- Ans**
- ☐ 1. PTM
 - ☒ 2. MPT
 - ☐ 3. MTP
 - ☐ 4. PMT

Q.99 Which of the following numbers is a perfect square?

- Ans**
- ☐ 1. 141
 - ☒ 2. 196
 - ☐ 3. 222
 - ☐ 4. 124

Q.100 Which of the following statements regarding ionic compounds is INCORRECT?

- Ans**
- ☐ 1. Ionic compounds are generally soluble in water.
 - ☐ 2. Ionic compounds are solids.
 - ☐ 3. Ionic compounds have a high melting point.
 - ☒ 4. Ionic compounds in solid state conduct electricity.



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

सी ई एन आर आर बी - ०२/२०२४ - CEN RRB - 02/2024



Test Center Name	iCube Digital
Test Date	30/12/2024
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technicians Grade III

*** Note**

Correct Answer will carry 1 mark per Question.

Incorrect Answer will carry 1/3 Negative mark per Question.

1. Options shown in green color with a tick icon are correct.

2. Chosen option on the right of the question indicates the option selected by the candidate.

Section : RRB Technicians Grade III

Q.1 Consider a parallel combination of 3 resistors R_1 , R_2 and R_3 with currents I_1 , I_2 and I_3 , respectively. Which of the following is true? (I = total current, R_{eq} = equivalent resistance of the circuit)

Ans

☒ 1. $R_{eq} = R_3 + \frac{R_2 R_1}{R_2 + R_1}$

☒ 2. $R_{eq} = R_1 + \frac{R_2 R_3}{R_2 + R_3}$

☒ 3. $\frac{1}{I} = \frac{1}{I_1} + \frac{1}{I_2} + \frac{1}{I_3}$

☒ 4. $I = I_1 + I_2 + I_3$

Q.2 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some pulses are flours.

All biscuits are curds.

All biscuits are flours.

Conclusions:

(I) All flours are curds.

(II) Some biscuits are pulses.

Ans

☒ 1. Only conclusion (II) follows.

☒ 2. Neither conclusion (I) nor (II) follows.

☒ 3. Only conclusion (I) follows.

☒ 4. Both conclusions (I) and (II) follow.

Q.3 The greatest number among $\sqrt{2}$, $3^{1/3}$, $4^{1/4}$ is:

- Ans ☒ 1. $3^{1/3}$
☐ 2. All are equal
☐ 3. $4^{1/4}$
☐ 4. $\sqrt{2}$

Q.4 By which unit do the successive members of the homogenous series CH_4 , C_2H_6 , and C_3H_8 differ from each other?

- Ans ☒ 1. CH_2
☐ 2. CH_4
☐ 3. CH_3
☐ 4. CH

Q.5 After fertilisation, which of the following develops a tough coat, is gradually converted into a seed and the zygote divides several times to form an embryo within it?

- Ans ☒ 1. Ovule
☐ 2. Ovary
☐ 3. Gynoecium
☐ 4. Pistil

Q.6 The motion of the moon around the earth is due to the:

- Ans ☒ 1. Centripetal force
☐ 2. Centrifugal force
☐ 3. Coulomb force
☐ 4. Coriolis force

Q.7 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 3 5 5 7 1 6 1 8 8 7 6 2 2 5 9 8 1 1 5 3 3 2 8 1 7 9 2 (Right)

How many such even digits are there each of which is immediately preceded by a perfect square and immediately followed by an odd digit? (Note: 1 will be considered as a perfect square.)

- Ans ☐ 1. 3
☐ 2. 0
☐ 3. 4
☒ 4. 2

Q.8 Which of the following is/are called biological catalysts?

- Ans ☐ 1. Digestive juices
☐ 2. Mucus
☐ 3. Hydrochloric acid
☒ 4. Enzymes

Q.9 Swarna runs at a speed of 10 km/h. How long will she take to cover 200 m?

- Ans**
- ☐ 1. 90 seconds
 - ☐ 2. 54 seconds
 - ☒ 3. 72 seconds
 - ☐ 4. 120 seconds

Q.10 Which of the following banks launched a special debit card for visually impaired customers in October 2024?

- Ans**
- ☒ 1. Punjab National Bank
 - ☐ 2. State Bank of India
 - ☐ 3. Canara Bank
 - ☐ 4. HDFC Bank

Q.11 The simplified value of $\sqrt{1.0816}$ is:

- Ans**
- ☒ 1. 1.04
 - ☐ 2. 1.286
 - ☐ 3. 0.904
 - ☐ 4. 1.35

Q.12 Evaluate the given expression.

$$5 \times 3 - 12 \div 4 + 8$$

- Ans**
- ☐ 1. 4
 - ☐ 2. 14
 - ☒ 3. 20
 - ☐ 4. 3

Q.13 If the roots of a plant always grow downwards due to geotropism, then the growth of pollen tubes towards ovules is due to _____.

- Ans**
- ☐ 1. phototropism
 - ☒ 2. chemotropism
 - ☐ 3. geotropism
 - ☐ 4. hydrotropism

Q.14 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(25, 5, 20)

(40, 8, 32)

- Ans**
- ☐ 1. (80, 14, 64)
 - ☐ 2. (80, 16, 60)
 - ☐ 3. (100, 16, 64)
 - ☒ 4. (80, 16, 64)

Q.15 On 30th September 2024, Union Minister for Information and Broadcasting Ashwini Vaishnaw announced that the jury had selected veteran film actor _____ as the recipient of the prestigious Dadasaheb Phalke Lifetime Achievement Award for 2022.

- Ans**
- ☐ 1. Asha Bhosle
 - ☐ 2. Rajinikanth
 - ☒ 3. Mithun Chakraborty
 - ☐ 4. Shah Rukh Khan

Q.16 Two numbers are less than a third number by 30% and 37%, respectively. By what percentage is the second number less than the first?

- Ans**
- ☐ 1. 12%
 - ☐ 2. 15%
 - ☒ 3. 10%
 - ☐ 4. 8%

Q.17 When three parallel lines are cut by two transversals and the intercepts made by the first transversal are in the ratio 3 : 5, then the intercepts made by the second transversal are in the ratio _____.

- Ans**
- ☐ 1. 9 : 25
 - ☒ 2. 3 : 5
 - ☐ 3. 3 : 2
 - ☐ 4. 1 : 1

Q.18 What is the measure of each exterior angle of a regular octagon?

- Ans**
- ☐ 1. 80°
 - ☐ 2. 30°
 - ☐ 3. 60°
 - ☒ 4. 45°

Q.19 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 1 6 8 3 9 5 2 7 6 3 2 9 9 7 3 9 6 4 6 3 2 6 2 2 0 3 4 7 2 (Right)

How many such even digits are there, each of which is immediately preceded by an odd digit and also immediately followed by an odd digit?

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 2
 - ☐ 4. 5

Q.20 Gautam starts from Point A and drives 30 km towards South. He then takes a left turn, drives 15 km, turns left and drives 42 km. He then takes a left turn and drives 7 km. He takes a final left turn, drives 12 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

(All turns are 90 degree turns only unless otherwise specified.)

- Ans**
- ☐ 1. 10 km towards East
 - ☐ 2. 10 km towards West
 - ☒ 3. 8 km towards West
 - ☐ 4. 5 km towards West

Q.21 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

(Left) 2 2 4 8 2 4 6 4 2 6 8 8 6 7 4 5 3 6 2 8 7 1 3 3 6 8 6 4 (Right)

How many such odd digits are there, each of which is immediately preceded by a perfect square and immediately followed by an even digit?

(Note: 1 will be considered as a perfect square.)

- Ans**
- ☐ 1. 2
 - ☐ 2. 4
 - ☐ 3. 1
 - ☒ 4. 0

Q.22 Who took oath as Chief Minister for the second time and the first to assume office after the scrapping of Article 370 in Jammu and Kashmir?

- Ans**
- ☐ 1. Mehbooba Mufti
 - ☐ 2. Shri Farooq Abdullah
 - ☐ 3. Shri Manoj Sinha
 - ☒ 4. Shri Omar Abdullah

Q.23 Which of the following colours of light is bent through a minimum angle when passing through a glass prism?

- Ans**
- ☐ 1. Violet
 - ☐ 2. Green
 - ☐ 3. Blue
 - ☒ 4. Yellow

Q.24 Which of the following unicellular organism change their shape?

- Ans**
- ☐ 1. Paramoecium
 - ☐ 2. Yeast
 - ☐ 3. Bacteria
 - ☒ 4. Amoeba

Q.25 The danger signal lights are usually red in colour because red is:

- Ans**
- ☐ 1. highest scattered by fog or smoke
 - ☐ 2. not scattered at all by fog or smoke
 - ☐ 3. highest reflected by fog or smoke
 - ☒ 4. least scattered by fog or smoke

Q.26 At what rate (in percentage) per annum will ₹1,300 give ₹520 as simple interest in 8 years?

- Ans**
- ☒ 1. 5%
 - ☐ 2. 7%
 - ☐ 3. 4%
 - ☐ 4. 8%

Q.27 What will come in the place of the question mark '?' in the following equation, if '+' and '÷' are interchanged and '×' and '-' are interchanged?

$$11 \div 12 + 4 - 5 \times 6 = ?$$

- Ans**
- ☐ 1. 28
 - ☒ 2. 20
 - ☐ 3. 16
 - ☐ 4. 22

Q.28 Two pipes C and D can fill a tank in 6 hours and 9 hours, respectively. They are opened alternately for 1 hour each, starting with C first. In what duration, will the tank be filled?

- Ans**
- ☐ 1. 6 hours
 - ☐ 2. 8 hours
 - ☐ 3. 5 hours
 - ☒ 4. 7 hours

Q.29 Two pipes A and B can fill the tank in 40 and 60 minutes, respectively. Both the pipes are opened together. After how many minutes should the pipe B be turned off, so that the tank be fill in 30 minutes?

- Ans**
- ☐ 1. 20 min
 - ☐ 2. 28 min
 - ☐ 3. 25 min
 - ☒ 4. 15 min

Q.30 $(a - b)^3 + (b - c)^3 + (c - a)^3 = ?$, which of the following should come in place of ? so that relation always holds true?

- Ans**
- ☐ 1. $2(a - b)(b - c)(c - a)$
 - ☐ 2. $(a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$
 - ☒ 3. $3(a - b)(b - c)(c - a)$
 - ☐ 4. $(a - b)(b - c)(c - a)$

Q.31 Simplify the given expression.

$$10 + 8 + 6 - 48 \div (4 \times 6)$$

- Ans**
- ☐ 1. 26
 - ☐ 2. -1
 - ☒ 3. 22
 - ☐ 4. 12

Q.32 What is the SI unit of universal gravitational constant G?

- Ans**
- ☒ 1. $\text{N m}^2/\text{kg}^2$
 - ☐ 2. $\text{N m}^2/\text{kgs}^{-1}$
 - ☐ 3. N kgm^2
 - ☐ 4. $\text{N m}^2/\text{kg}^{-1}$

Q.33 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

(Note: The odd man out is not based on the number of consonants/vowels or their position in the letter cluster)

- Ans**
- ☐ 1. VCJ
 - ☐ 2. AHO
 - ☒ 3. EMS
 - ☐ 4. HOV

Q.34 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which pair does not belong to that group?

(Note: The odd one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☐ 1. QL-OR
 - ☒ 2. SN-QU
 - ☐ 3. UP-SV
 - ☐ 4. OJ-MP

Q.35 Ramesh has borrowed an amount of ₹2,00,000 from a bank to start a business. How much simple interest will he pay at a rate of 11% per annum after 2 years?

- Ans**
- ☐ 1. ₹44,600
 - ☒ 2. ₹44,000
 - ☐ 3. ₹45,500
 - ☐ 4. ₹46,000

Q.36 Nayab Singh Saini was appointed the Chief Minister of ____ in October 2024.

- Ans**
- ☐ 1. Jharkhand
 - ☐ 2. Himachal Pradesh
 - ☐ 3. Punjab
 - ☒ 4. Haryana

Q.37 While subtracting 4 from $\frac{-3}{13}$, the resultant value is:

- Ans**
- ☐ 1. $\frac{-53}{13}$
 - ☒ 2. $\frac{-55}{13}$
 - ☐ 3. $\frac{-51}{13}$
 - ☐ 4. $\frac{-54}{13}$

Q.38 Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some games are boards.

No board is a dice.

No remote is a game.

Conclusions:

(I) No game is a dice.

(II) Some remotes are boards.

- Ans**
- ☐ 1. Only conclusion (I) follows.
 - ☒ 2. Neither conclusion (I) nor (II) follows.
 - ☐ 3. Both conclusions (I) and (II) follow.
 - ☐ 4. Only conclusion (II) follows.

Q.39 The average of Kanchan's marks in 7 subjects is 75. Her average in six subjects excluding Science is 72. How many marks did she get in Science?

- Ans**
- ☐ 1. 90
 - ☐ 2. 72
 - ☒ 3. 93
 - ☐ 4. 95

Q.40 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \tan \theta \cos \theta + \sin \theta$ is _____.

- Ans**
- ☐ 1. $\sec^2 \theta$
 - ☐ 2. -1
 - ☐ 3. 0
 - ☒ 4. $2\sin \theta$

Q.41 The power input in a circuit P can be expressed in terms of voltage V and current I in the circuit as follows:

- Ans**
- ☐ 1. $P = V^2/I$
 - ☒ 2. $P = VI$
 - ☐ 3. $P = V/I$
 - ☐ 4. $P = V^2I$

Q.42 The average of thirteen consecutive integers is 36. If two times the smallest of these 13 integers is added to the largest of these 13 integers, what will be the sum obtained?

- Ans**
- ☐ 1. 121
 - ☐ 2. 115
 - ☐ 3. 110
 - ☒ 4. 102

Q.43 Which of the following can increase the work done by a force on an object?

- Ans**
- ☐ 1. Reducing the displacement.
 - ☐ 2. Reducing the force.
 - ☐ 3. Reducing the mass.
 - ☒ 4. Increasing the displacement.

Q.44 If the matrix of bone cells contains calcium and phosphorus compounds, then what do we find in the matrix of cartilage?

- Ans**
- ☐ 1. Proteins and fats
 - ☒ 2. Proteins and sugars
 - ☐ 3. Calcium and sugars
 - ☐ 4. Phosphorus and sugars

Q.45 Which of the following describes dendrites?

- Ans**
- ☐ 1. Short and unbranched
 - ☐ 2. Long and unbranched
 - ☒ 3. Short and branched
 - ☐ 4. Long and branched

Q.46 In a certain code language, 'ROAM' is coded as '2835' and 'MORE' is coded as '4538'. What is the code for 'A' in the given code language?

- Ans**
- ☐ 1. 5
 - ☒ 2. 2
 - ☐ 3. 3
 - ☐ 4. 8

Q.47 Which of the following forms a common passage for both the sperms and urine in males?

- Ans**
- ☒ 1. Urethra
 - ☐ 2. Urinary bladder
 - ☐ 3. Vas deferens
 - ☐ 4. Scrotum

Q.48 In this question, a statement is followed by two courses of actions, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the course of action/s logically follow for pursuing.

Statement – In City X, the number of car accidents has spiked recently due to poor road conditions and lack of adequate signage.

I. The city should launch an awareness campaign to educate drivers on safe driving practices.

II. Immediate Road repair and installation of proper signage should be carried out.

- Ans**
- ☐ 1. Both I and II follow
 - ☐ 2. Only I follows
 - ☐ 3. Neither I nor II follows
 - ☒ 4. Only II follows

Q.49 The term 'Catenation' is used to define a unique property of carbon. Which of the following gives the correct definition of catenation?

- Ans**
- ☒ 1. Unique ability to form bonds with other atoms of carbon.
 - ☐ 2. Unique ability to form bonds with other atoms of nitrogen.
 - ☐ 3. Unique ability to form bonds with other atoms of oxygen.
 - ☐ 4. Unique ability to form bonds with other atoms of hydrogen.

Q.50 Which of the following statements is correct for a homogeneous mixture of sugar in water?

- Ans**
- ☐ 1. Sugar is the solvent.
 - ☒ 2. Water is the solvent.
 - ☐ 3. Both water and sugar are solvents.
 - ☐ 4. Water is the solute.

Q.51 A student in a lab noted the pH value of a solution to be 10. Which of the following statements is correct about a solution?

- Ans**
- ☐ 1. A solution is basic with a high hydrogen ion concentration.
 - ☒ 2. A solution is basic with a high hydroxide ion concentration.
 - ☐ 3. A solution is acidic with a high hydrogen ion concentration.
 - ☐ 4. A solution is acidic with a high hydroxide ion concentration.

Q.52 What is the value of x for balanced chemical equation $3\text{Fe} + x\text{H}_2\text{O} \rightarrow \text{Fe}_3\text{O}_4 + 4\text{H}_2$?

- Ans**
- ☐ 1. 1
 - ☐ 2. 5
 - ☐ 3. 3
 - ☒ 4. 4

Q.53 A 70 cm long wire is to be cut into two pieces so that one piece will be $\frac{2}{5}$ of the other. How many centimetres will the shorter piece be?

- Ans**
- ☐ 1. 10 cm
 - ☐ 2. 25 cm
 - ☐ 3. 30 cm
 - ☒ 4. 20 cm

Q.54 Two numbers are respectively 30% and 37% less than a third number. What percentage of the first number is the second number?

- Ans**
- ☐ 1. 10%
 - ☐ 2. 20%
 - ☐ 3. 80%
 - ☒ 4. 90%

Q.55 Which of the following is NOT an abiotic component of the ecosystem?

- Ans**
- ☐ 1. Rainfall
 - ☒ 2. Grass
 - ☐ 3. Wind
 - ☐ 4. Soil

Q.56 Lavanya got married 10 years ago. Now her age is $1\frac{1}{5}$ times her age at the time of marriage. Her son's present age is one-tenth of her present age. Find her son's present age.

- Ans**
- ☐ 1. 20 years
 - ☐ 2. 5 years
 - ☐ 3. 12 years
 - ☒ 4. 6 years

Q.57 Which of the following scientists proposed the 'Law of Constant Proportions'?

- Ans**
- ☐ 1. Ernest Rutherford
 - ☐ 2. E Goldstein
 - ☐ 3. JJ Thomson
 - ☒ 4. Joseph Proust

Q.58 If the cross-sectional area of a conductor is doubled, other factors remaining the same, the resistivity of the conductor will be:

- Ans**
- ☒ 1. same
 - ☐ 2. one fourth
 - ☐ 3. doubled
 - ☐ 4. halved

Q.59 Which of the following options represents the number of neutrons present in aluminium?

- Ans**
- ☐ 1. 13
 - ☐ 2. 15
 - ☒ 3. 14
 - ☐ 4. 27

Q.60 Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

UQ-VR-WY

RN-SO-TV

- Ans**
- ☐ 1. NK-PL-QR
 - ☐ 2. NK-PM-QS
 - ☒ 3. OK-PL-QS
 - ☐ 4. OK-PM-QR

Q.61 ATP is broken down giving rise to a fixed amount of energy that can drive the endothermic reactions taking place in which cell organelle of a cell?

- Ans**
- ☐ 1. Chloroplast
 - ☐ 2. Lysosome
 - ☒ 3. Mitochondria
 - ☐ 4. Ribosome

Q.62 Parbati Baruah was awarded the Padma Shri-2024. For which achievement is she known?

- Ans**
- ☐ 1. Rhino conservation
 - ☒ 2. First woman mahout
 - ☐ 3. Tiger conservation
 - ☐ 4. Lion conservation

Q.63 The fragmentation method of reproduction is shown in _____.

- Ans**
- ☐ 1. Amoeba
 - ☐ 2. Plasmodium
 - ☒ 3. Spirogyra
 - ☐ 4. Hydra

Q.64 Where should the object be placed around the concave mirror to ensure that the size of the image is the same as the size of the object?

- Ans**
- ✓ 1. At C, centre of curvature
 - ✗ 2. Between focus F and pole P
 - ✗ 3. At focus F
 - ✗ 4. Between focus F and centre of curvature C

Q.65 SDFG is related to YJKM in a certain way based on the English alphabetical order. In the same way, QBZE is related to WHEK. To which of the following options is ITOW related, following the same logic?

- Ans**
- ✗ 1. RYOM
 - ✗ 2. MJVY
 - ✓ 3. OZTC
 - ✗ 4. HBCT

Q.66 What was India's rank in the 2024 Global Hunger Index (GHI), a tool used to measure and track hunger at the global, regional and national levels?

- Ans**
- ✓ 1. 105
 - ✗ 2. 111
 - ✗ 3. 119
 - ✗ 4. 110

Q.67 TakeMe2Space (TM2Space), an innovative space technology firm, is based in which city of India?

- Ans**
- ✗ 1. Kolkata
 - ✗ 2. New Delhi
 - ✓ 3. Hyderabad
 - ✗ 4. Chennai

Q.68 The cause of being the refractive index(μ) of transparent medium > 1 , is:

- Ans**
- ✓ 1. Speed of light in vacuum $>$ speed of light in transparent medium
 - ✗ 2. Wavelength of light gets change as it moves from denser to rarer medium
 - ✗ 3. Speed of light in vacuum = speed of light in transparent medium
 - ✗ 4. Speed of light in vacuum $<$ speed of light in transparent medium

Q.69 Find one-third part of a number whose one-third part exceeds the one-fifth part by 6.

- Ans**
- ✗ 1. 45
 - ✓ 2. 15
 - ✗ 3. 24
 - ✗ 4. 5

Q.70 Identify the INCORRECT statement about muscle tissue.

- Ans**
- ✓ 1. Muscle tissues are made up of cuboidal cells.
 - ✗ 2. The limbs have voluntary muscles.
 - ✗ 3. Special contractile proteins are present in muscles.
 - ✗ 4. Microscopes reveal alternate light and dark bands in voluntary muscles.

Q.71 If A means +, B means -, C means $\times$, D means $\div$, then what will come in place of the question mark (?) in the following equation?

$$21 \text{ D } 3 \text{ B } 4 \text{ C } 5 \text{ A } 22 = ?$$

- Ans**
- ☒ 1. 10
 - ☒ 2. 9
 - ☐ 3. 7
 - ☐ 4. 8

Q.72 $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)} + \text{Heat}$, this reaction is called:

- Ans**
- ☒ 1. combination reaction
 - ☐ 2. decomposition reaction
 - ☐ 3. Wurtz fittig reaction
 - ☐ 4. Wurtz reaction

Q.73 Select the set in which the numbers are related in the same way as are the numbers of the following sets.

(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into its constituent digits. E.g. 13 – Operations on 13 such as adding/subtracting/multiplying etc. to 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

(12, 38, 26)

(50, 75, 25)

- Ans**
- ☒ 1. (14, 42, 28)
 - ☐ 2. (9, 28, 16)
 - ☐ 3. (8, 32, 7)
 - ☐ 4. (21, 40, 15)

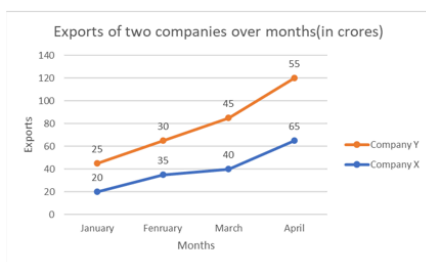
Q.74 The centre of curvature of a concave mirror lies _____ the mirror, whereas it lies _____ the mirror for a convex mirror.

- Ans**
- ☐ 1. in front of, in front of
 - ☐ 2. behind, in front of
 - ☒ 3. in front of, behind
 - ☐ 4. behind, behind

Q.75 Most mature plant cells have a _____ that helps to maintain the turgidity of the cell and store important substances including wastes.

- Ans**
- ☒ 1. large central vacuole
 - ☐ 2. leucoplasts
 - ☐ 3. small ribosome
 - ☐ 4. chromoplasts

Q.76 Study the following chart and answer the question that follows.



What is the absolute difference between the export by company X in February and export by company Y in April?

- Ans**
- ✓ 1. 20 crore
 - ✗ 2. 5 crores
 - ✗ 3. 15 crore
 - ✗ 4. 10 crore

Q.77 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HLG, KOJ, NRM, QUP, ?

- Ans**
- ✗ 1. XTS
 - ✓ 2. TXS
 - ✗ 3. XST
 - ✗ 4. TSX

Q.78 Which of the following elements does NOT usually form molecules and is found in its atomic form?

- Ans**
- ✗ 1. Hydrogen
 - ✗ 2. Oxygen
 - ✗ 3. Nitrogen
 - ✓ 4. Helium

Q.79 1 kW power is equal to _____. (kW stands for kilowatt.)

- Ans**
- ✓ 1. 1000 J/s
 - ✗ 2. 100 J/s
 - ✗ 3. 10 J/s
 - ✗ 4. 1 J/s

Q.80 In a parallelogram two adjacent sides are in the ratio 2 : 3 and the perimeter is 60 cm. The length of each of the two shorter sides of this parallelogram is:

- Ans**
- ✓ 1. 12 cm
 - ✗ 2. 19 cm
 - ✗ 3. 13 cm
 - ✗ 4. 18 cm

Q.81 D, E, F, G, L, M and N are sitting around a circular table facing the centre. F sits third to the left of L. N sits second to the left of E. L is an immediate neighbour of both D and N. G is not an immediate neighbour of F. How many people sit between M and N when counted from the right of M?

- Ans**
- ✗ 1. Four
 - ✗ 2. One
 - ✓ 3. Two
 - ✗ 4. Three

Q.82 Seven people, A, B, E, G, P, Q and R, are sitting in a row, facing north. Only two people sit to the left of B. Only three people sit between B and R. P sits second to the right of B. Only two people sit between P and A. G sits at some place to the right of E but at some place to the left of Q. How many people sit to the right of G?

- Ans**
- ☐ 1. Two
 - ☐ 2. Four
 - ☐ 3. One
 - ☒ 4. Three

Q.83 In a certain code language,
'A + B' means 'A is the mother of B',
'A - B' means 'A is the brother of B',
'A x B' means 'A is the wife of B'
and 'A ÷ B' means 'A is the father of B'.
How is H related to L if 'H + J x K ÷ M - L'?

- Ans**
- ☐ 1. Wife's mother
 - ☐ 2. Father's mother
 - ☒ 3. Mother's mother
 - ☐ 4. Mother's sister

Q.84 A and B invest ₹30,000 and ₹24,000, respectively, for one year. If they get a profit of ₹13,500, then the share of A in the profit will be:

- Ans**
- ☐ 1. ₹9,000
 - ☐ 2. ₹6,000
 - ☒ 3. ₹7,500
 - ☐ 4. ₹9,450

Q.85 Which of the following is NOT an example of homogeneous mixture?

- Ans**
- ☐ 1. A mixture of salt in water
 - ☐ 2. A mixture of sugar in water
 - ☒ 3. A mixture of iron nails in water
 - ☐ 4. A mixture of copper sulphate in water

Q.86 What is the title of the book by Nandan Kamath that won the Sports Book of the Year award in 2024?

- Ans**
- ☐ 1. Playing It My Way
 - ☒ 2. Boundary Lab
 - ☐ 3. Spirit of Sports
 - ☐ 4. The Winning Mindset

Q.87 B, C, D, E, F, K and L are sitting around a circular table, facing the centre. D sits to the immediate right of E. Only three people sit between E and L. B sits to the immediate right of C. Only three people sit between D and F when counted from the left of D. How many people sit between K and C when counted from the left of C?

- Ans**
- ☒ 1. Two
 - ☐ 2. Four
 - ☐ 3. One
 - ☐ 4. Three

Q.88 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

81, 108.6, 136.2, 163.8, ?

- Ans**
- ☐ 1. 183.6
 - ☐ 2. 174.8
 - ☐ 3. 198.2
 - ☒ 4. 191.4

Q.89 After getting two successive discounts, a shirt with a list price of ₹150 is available at ₹105. If the second discount is 12.5%, then find the first discount.

- Ans**
- ☐ 1. 25%
 - ☐ 2. 12%
 - ☒ 3. 20%
 - ☐ 4. 15%

Q.90 Which of the following after fertilisation grows rapidly and ripens to form a fruit. Meanwhile, the petals, sepals, stamens, style and stigma may shrivel and fall off?

- Ans**
- ☐ 1. Ovule
 - ☐ 2. Gynoecium
 - ☐ 3. Pistil
 - ☒ 4. Ovary

Q.91 A retailer permits a trade discount of 25%, followed by a cash discount of 8%, on an article. The net percentage of discount is:

- Ans**
- ☐ 1. 33%
 - ☐ 2. 34%
 - ☒ 3. 31%
 - ☐ 4. 32%

Q.92 Which of the following chemical reactions represents the displacement reaction?

- Ans**
- ☐ 1. $\text{CaO(s)} + \text{H}_2\text{O(l)} \rightarrow \text{Ca(OH)}_2\text{(aq)}$
 - ☐ 2. $\text{C(s)} + \text{O}_2\text{(g)} \rightarrow \text{CO}_2\text{(g)}$
 - ☒ 3. $\text{Zn(s)} + \text{CuSO}_4\text{(aq)} \rightarrow \text{ZnSO}_4\text{(aq)} + \text{Cu(s)}$
 - ☐ 4. $2\text{AgCl(s)} \rightarrow 2\text{Ag(s)} + \text{Cl}_2\text{(g)}$

Q.93 In a certain code language, 'BEAM' is coded as '9483' and 'DAME' is coded as '9683'. What is the code for 'B' in the given code language?

- Ans**
- ☐ 1. 3
 - ☒ 2. 4
 - ☐ 3. 8
 - ☐ 4. 9

Q.94 Which new initiative was launched by the government on National Sports Day 2024?

- Ans**
- ☐ 1. National Fitness Challenge
 - ☐ 2. Fit India Movement
 - ☐ 3. National Sports Scholarship Scheme
 - ☒ 4. Retired Sportsperson Empowerment Training (RESET) Programme

Q.95 Which of the following reactions is an example of double displacement reaction?

- Ans**
- ☒ 1. $\text{Fe(s)} + \text{CuSO}_4 \text{ (aq)} \rightarrow \text{FeSO}_4 \text{ (aq)} + \text{Cu(s)}$
 - ☒ 2. $\text{Na}_2 \text{SO}_4 \text{ (aq)} + \text{BaCl}_2 \text{ (aq)} \rightarrow \text{BaSO}_4 \text{ (s)} + 2\text{NaCl (aq)}$
 - ☒ 3. $\text{Zn(s)} + \text{CuSO}_4 \text{ (aq)} \rightarrow \text{ZnSO}_4 \text{ (aq)} + \text{Cu(s)}$
 - ☒ 4. $\text{Pb(s)} + \text{CuCl}_2 \text{ (aq)} \rightarrow \text{PbCl}_2 \text{ (aq)} + \text{Cu(s)}$

Q.96 In which of the following situations is potential energy being stored?

- Ans**
- ☒ 1. Lighting a matchstick
 - ☒ 2. Stretching a rubber band
 - ☒ 3. Moving a pencil across a table
 - ☒ 4. Pushing a vehicle on the plane road

Q.97 Select the correct statement related to the characteristics of prokaryotic cell.

- Ans**
- ☒ 1. Membrane bound cell organelles are present.
 - ☒ 2. It has a single chromosome.
 - ☒ 3. It has more than one chromosome.
 - ☒ 4. Nuclear region is well defined and surrounded by nuclear membrane.

Q.98 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

MPL, ORN, QTP, SVR, ?

- Ans**
- ☒ 1. XTU
 - ☒ 2. XUT
 - ☒ 3. UXT
 - ☒ 4. UTX

Q.99 At which event was Ram Charan awarded the title of Ambassador for Indian Art and Culture?

- Ans**
- ☒ 1. Indian Film Festival of Melbourne (IFFM) 2024
 - ☒ 2. International Film Festival of India 2024
 - ☒ 3. Toronto International Film Festival 2024
 - ☒ 4. Cannes Film Festival 2024

Q.100 Identify the name of an alloy formed when mix of copper and tin (Cu and Sn)?

- Ans**
- ☒ 1. Bronze
 - ☒ 2. Gold
 - ☒ 3. Brass
 - ☒ 4. Solder