रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS
सीईएन - 04/2026 - जेई, डीएमएस, सीएमए - CEN - 04/2026 - JE, DMS, CMA

Test Date	28/10/2026
Test Time	9:00 AM - 10:30 AM
Subject / Exam Group	RRB JE DMS CMA CBT I

*** 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 JE DMS CMA CBT I**

Q.1 **Which Article provides the 'Duty of the Union to Protect States' against external aggression and internal disturbance?**

Ans
✗ 1. Article 354
✗ 2. Article 360
✓ 3. Article 355
✗ 4. Article 365

Q.2 **Which of the following pairs correctly matches the element with its atomic symbol, based on the rules for writing symbols of atoms?**

Ans
✗ 1. Iron - Ir
✗ 2. Silver - Si
✓ 3. Sodium - Na
✗ 4. Potassium - Po

Q.3 **In this question, a group of numbers/symbols is coded using letter codes as per the codes given below and the conditions which follow. The correct combination of codes following the conditions is your answer. If none of the conditions follow, then the codes for the respective number/symbol are to be followed directly as given in the table.**

Number/Symbol	*	@	6	3	9	1	2	?	7	8
Code	B	H	Z	X	C	U	D	L	R	A

Conditions –
(i) If the first element is a symbol, interchange the codes of the first and last elements.
(ii) If the second and third elements are numbers, code the third element as the code of the second element.
(iii) If the fourth element is a symbol, code both fourth and fifth elements as ©.

What is the code for the following group of number-symbols?
***@639**

Ans
✗ 1. BHZLC
✗ 2. DHZXC
✗ 3. BHUXC
✓ 4. CHZXB

Q.4 **A manufacturer fixes his selling price at 26% over the cost of production. If the cost of production goes up by 26%, and the manufacturer raises his selling price by 50%, find the profit percentage.**

Ans

✗ 1. 47%

✗ 2. 53%

✓ 3. 50%

✗ 4. 51%

Q.5 Find the value of $(\sin\theta + \operatorname{cosec}\theta)^2 + (\cos\theta + \sec\theta)^2 - \tan^2\theta - \cot^2\theta$.

Ans

✓ 1. 7

✗ 2. 6

✗ 3. 10

✗ 4. 0

Q.6 **A student strikes the same desk twice with a pencil—first gently and then with greater force. Which observation is correct?**

Ans

✗ 1. The gentle strike produces a louder sound because it lasts longer.

✗ 2. Both strikes produce the same loudness because the same pencil is used.

✗ 3. The loudness depends only on the thickness of the desk.

✓ 4. The harder strike produces a louder sound because it creates vibrations of greater amplitude.

Q.7 **The price (per litre) of petrol increases by 75%. By what percentage should its consumption be changed so that the total expenditure on petrol increases by only 61%?**

Ans

✗ 1. Increase by 18%

✓ 2. Decrease by 8%

✗ 3. Decrease by 18%

✗ 4. Increase by 8%

Q.8 **Each of C, D, E, F, X, Y and Z has an exam on a different day of a week starting from Monday and ending on Sunday of the same week.**
Y has exam on Thursday, and F has exam on Saturday. C has exam immediately before Z.
E has exam on one of the days after X. D has exam immediately after Z.
How many people have exam(s) between E and D?

Ans

✗ 1. One

✗ 2. Four

✓ 3. Three

✗ 4. Two

Q.9 **Atoms of different elements with different atomic numbers, which have the same mass number, are known as:**

Ans

✗ 1. isotones

✗ 2. isomers

✗ 3. isotopes

✓ 4. isobars

Q.10 **If the direction of current in a vertical wire is upward, the direction of magnetic field lines around it (viewed from above) will be _____.**

Ans

✗ 1. Always downward

✗ 2. Always upward

✗ 3. Clockwise

✓ 4. Anti-clockwise

Q.11 **A product is sold at a profit of 131% on its cost price. If the cost price and selling price are interchanged, what percentage loss would be incurred on the transaction? Give your answer rounded off to two decimal places.**

Ans

✗ 1. 59.28%

✗ 2. 58.16%

✗ 3. 57.15%

✓ 4. 56.71%

Q.12 **One-fifth of a certain distance was covered at the speed of 85 km/h, one-third at 60 km/h, and the rest at the speed of 80 km/h. What is the average speed (in km/h) during the entire journey? (Correct up to two decimal places)**

Ans

✗ 1. 75.25

✓ 2. 72.77

✗ 3. 72.11

✗ 4. 70.51

Q.13 **A biologist uses a converging lens with a power of +5 D to focus sunlight onto a specimen. If the focal length of the lens changes due to heating and becomes 15 cm, what is the new power of the lens?**

Ans

✓ 1. +6.67 D

✗ 2. +5 D

✗ 3. +0.15 D

✗ 4. +1.5 D

Q.14 **In 1969, which taxonomist developed the five kingdom model to classify living organisms?**

Ans

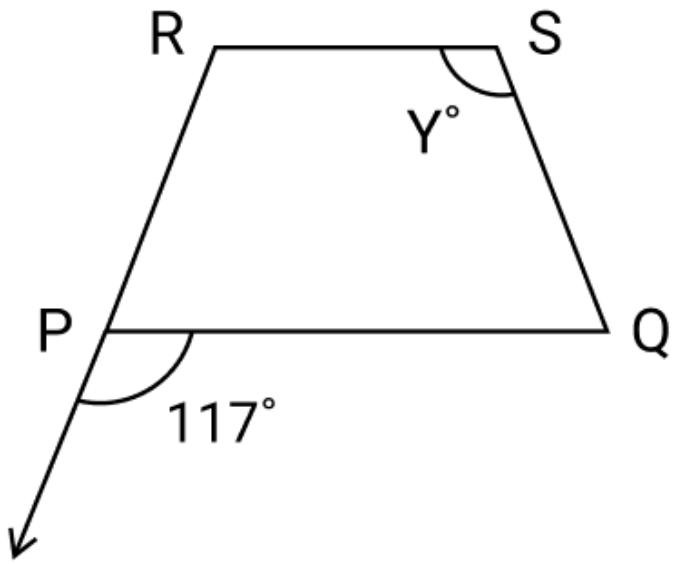
✗ 1. Aristotle

✗ 2. Carl Linnaeus

✗ 3. Herbert F. Copeland

✓ 4. Robert H. Whittaker

Q.15 **In the given figure, PQ ∥ RS. Find the value of Y.**



Ans

✗ 1. 117

✓ 2. 63

✗ 3. 93

✗ 4. 27

Black

Q.16 **Which of the following authorities is responsible for removing encroachments from public spaces within a village jurisdiction in India?**

Ans

✗ 1. Gram Nyayalayas

✗ 2. Taluka Magistrate

✗ 3. Police Department

✓ 4. Gram Panchayat

Q.17 **A portable camping lantern operates with a built-in battery delivering a constant voltage. When a user switches from the 'dim' to the 'bright' setting, the lantern's bulb receives more power. Assuming the battery voltage remains unchanged, which change in the lantern's circuitry most directly explains the increased brightness?**

Ans

✗ 1. The voltage supplied by the battery is increased, keeping resistance constant

✗ 2. The current through the bulb is decreased, with resistance unchanged

✓ 3. The resistance in the bulb circuit is decreased, increasing current

✗ 4. The resistance in the bulb circuit is increased, reducing current

Q.18 **The Nagara style of Hindu temple architecture, marked by a curvilinear shikhara, is primarily associated with which region of India?**

Ans

✓ 1. North India

✗ 2. South India

✗ 3. Central Deccan only

✗ 4. Northeast India

Q.19 **The sum of the areas of two circles which are touching externally is 130π sq.cm. If the distance between their centers is 14 cm, then the radius of the smaller circle is:**

Ans

✓ 1. 3 cm

✗ 2. 9 cm

✗ 3. 5 cm

✗ 4. 11 cm

Q.20 Find the value of $[(98 \div 14) \times \{(76 \div 4) + (12 \div 6) \times (7 - 4)\}]$.

Ans

✓ 1. 175

✗ 2. 707

✗ 3. 73

✗ 4. 693

Q.21 **In January 2026, the PARAM Rudra supercomputer was inaugurated at IIT Bombay. Under which mission was this facility developed and deployed?**

Ans

✗ 1. National Quantum Mission

✗ 2. India Semiconductor Mission

✗ 3. National Blockchain Framework

✓ 4. National Supercomputing Mission

Q.22 **What should come in place of the question mark (?) in the given series?**

9 17 30 60 95 147 ?

Ans

✓ 1. 204

✗ 2. 209

✗ 3. 213

✗ 4. 205

black book

Q.23 **At the Asian U20 Athletics Championships 2026, Pooja Singh broke a 14-year-old national record by clearing 1.93 m. In which event did she achieve this?**

Ans

✗ 1. Women's triple jump

✓ 2. Women's high jump

✗ 3. Women's pole vault

✗ 4. Women's long jump

Q.24 **R, S, T, U, G, H, and I are sitting around a circular table facing the centre of the table. H sits fourth to the right of U. Only two people sit between I and S when counted from the left of I. R sits third to the left of T. G is an immediate neighbor of T and S. How many people are between H and G when counted from the left of G?**

Ans

✓ 1. Four

✗ 2. One

✗ 3. Three

✗ 4. Two

Q.25 **Akshat invested ₹39600 at 10% per annum for 1 year at compound interest, compounded half-yearly. The amount received by him is:**

Ans

✗ 1. ₹44618

✗ 2. ₹43488

✗ 3. ₹43063

✓ 4. ₹43659

Q.26 **A question is followed by two statements numbered (I) and (II).You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and decide the appropriate answer.**

Question:
Five runners – Vihaan, Wamiqa, Xander, Yashika and Zoravar – finished a race. Who finished last?

Statements:
(I) There are exactly two runners between Xander and Zoravar.
(II) Wamiqa finished ahead of Vihaan, and Yashika finished ahead of Xander.

Ans

✗ 1. Data in statement I alone is sufficient to answer the question while data in statement II is not.

✗ 2. Data in statement II alone is sufficient to answer the question while data in statement I is not.

✓ 3. Data in both statements I and II together are NOT sufficient to answer the question.

✗ 4. Data in both statements I and II together (and not statement I alone or statement II alone) are sufficient to answer the question.

Q.27 **One pipe can fill the tank in 24 minutes while another pipe can empty the completely filled tank in 56 minutes. If both pipes are operated together on an empty tank, how long (in minutes) will it take to fill one-third of the tank?**

Ans

✗ 1. 15

✗ 2. 12

✓ 3. 14

✗ 4. 13

Q.28 **Simplify the following expression.**

$$3200 \div 16 \text{ of } \frac{1}{80} + \frac{15}{320} \times 6400 + [850 \div 17] \times 40$$

Ans

✗ 1. 17300

✗ 2. 16300

✓ 3. 18300

✗ 4. 19300

blackbook

Q.29 **A long, vertical metal pipe buried underground carries a steady electric current upward. A technician above ground holds a digital compass parallel to the pipe at a distance of 0.8 meters. Unexpectedly, the compass needle deflects eastward rather than aligning north. Which analysis best explains this observation?**

Ans

✗ 1. The compass is affected only by Earth's magnetic field, so the current in the pipe cannot explain the observed deflection.

✗ 2. The compass needle should point directly outward from the pipe, as magnetic fields radiate straight from current-carrying wires.

✓ 3. The magnetic field produced by the upward current flows horizontally, causing the compass needle to align tangentially to the pipe's magnetic field at that location.

✗ 4. The current must be alternating, not steady, for a compass to be influenced in this way above ground.

Q.30 **Each letter in the word PROVEN is changed to the letter immediately succeeding it in the English alphabetical order and then all the letters in the letter-cluster thus formed are arranged in the English alphabetical order. Which of the following letters will be second from the right in the new letter-cluster thus formed?**

Ans

✓ 1. S

✗ 2. O

✗ 3. P

✗ 4. Q

Q.31 **Chetan starts from point A and drives 27 km towards West. He then takes a left turn and drives 16 km. He takes a final left turn and drives 32 km and stops at point B. Mohan starts from point P, which is 56 km East of Point A, and drives 21 km towards West. He then takes a left turn and drives 16 km. He takes a final right turn and drives 24 km and stops at Point Q. What is the shortest distance between Point Q and Point B? (All turns are 90-degree turns only.)**

Ans

✗ 1. 8 km

✓ 2. 6 km

✗ 3. 2 km

✗ 4. 4 km

Q.32 **Two friends, P and Q, started a business with initial capital contributions of ₹386 and ₹178, respectively. At the end of the year, the business made a profit of ₹56,400. Find the share of P (in ₹) in the profit.**

Ans

✗ 1. 38,450

✗ 2. 38,500

✗ 3. 38,700

✓ 4. 38,600

Q.33 **Five aqueous solutions have pH values 1, 4, 7, 9 and 11. Which of the following arrangements correctly represents the increasing order of hydrogen ion (H^+) concentration?**

Ans

✗ 1. 1 < 4 < 7 < 9 < 11

✓ 2. 11 < 9 < 7 < 4 < 1

✗ 3. 4 < 1 < 7 < 9 < 11

✗ 4. 7 < 9 < 11 < 4 < 1

Q.34 **Divide ₹9100 into three parts in such a way that half of the first part, one-fourth of the second part and one-eighth of the third part are equal. Find the first part (in ₹).**

Ans

✗ 1. 1600

✓ 2. 1300

✗ 3. 1400

✗ 4. 1200

Q.35 **Which statement best describes the calculation of the molecular mass of a compound?**

Ans

✗ 1. It is found by counting only the unique atomic masses in the molecule.

✗ 2. It is found by subtracting the smallest atomic mass from the largest in the molecule.

✓ 3. It is found by adding the atomic masses of all atoms present in the molecule.

✗ 4. It is found by using the highest atomic mass among the atoms in the molecule.

Q.36 **Solve the following system, and find the values of x, y, and z.**

x + y + z = 12
x − 3y − z = 18
x − y − z = 10

Ans

✗ 1. x= 11, y = 4, z = 5

✓ 2. x= 11, y = −4, z = 5

✗ 3. x= 10, y = −4, z = 5

✗ 4. x= 11, y = −4, z = 6

Q.37 **I is the brother of Z. C is the sister of A. Y is the son of A. A is the wife of Z. How is I related to Y?**

Ans

✓ 1. Father's brother

✗ 2. Father's father

✗ 3. Son

✗ 4. Father

Q.38 **In this question, a group of numbers/symbols is coded using letter codes as per the codes given below and the conditions which follow. The correct combination of codes following the conditions is your answer. If none of the conditions follow, then the codes for the respective number/symbol are to be followed directly as given in the table.**

Number/Symbol	6	8	1	9	7	3	#	@	5	%
Code	L	R	G	M	W	X	K	Q	E	N

Conditions –
(i) If the first element is an odd number, interchange the codes of the first and last elements.
(ii) If the second and third elements are numbers, code the third element as the code of the second element.
(iii) If the fourth element is an even number, code both fourth and fifth elements as ©.

What is the code for the following group of number-symbols?
68197

Ans

✗ 1. LRGMW

✓ 2. LRRMW

✗ 3. LRGKW

✗ 4. LXGMW

Q.39 **In the context of nervous tissue, what is the primary function of neurons?**

Ans

✗ 1. Neurons produce hormones for the body

✗ 2. Neurons store energy for the brain

✗ 3. Neurons generate force for movement

✓ 4. Neurons receive and transmit messages

Q.40 **An open rectangular box (without a lid) is made of wood 1 cm thick. Its external dimensions are 20 cm long, 15 cm wide, and 10 cm high. Find the volume of the wood used in making the box.**

Ans

✓ 1. 894 cm^3

✗ 2. 900 cm^3

✗ 3. 856 cm^3

✗ 4. 800 cm^3

blackbook

Q.41 **Which statement about the role of glands in the male reproductive system is CORRECT?**

Ans

✗ 1. They are responsible for sperm production

✓ 2. They add fluids that nourish the sperm

✗ 3. They store the genetic material of sperm

✗ 4. They control the temperature of the testes

Q.42 **If 40% of a number is added to 120, then the result is the same number. 70% of the same number is:**

Ans

✓ 1. 140

✗ 2. 160

✗ 3. 180

✗ 4. 120

Q.43 If the mean of the following data is 50, then what is the value of x?

Class	30-40	40-50	50-60	60-70	70-80
Frequency	47	19	21	13	X

Ans

✓ 1. 20

✗ 2. 14

✗ 3. 37

✗ 4. 45

Q.44 **A ball is tied to a string and swung in a horizontal circle at constant speed. What would happen if the string suddenly breaks?**

Ans

✗ 1. The ball will spiral inward toward the center of the circle.

✓ 2. The ball will move in a straight line tangential to the circle at the breaking point.

✗ 3. The ball will continue to move in a circular path for a short time.

✗ 4. The ball will move outward away from the center of the circle.

Q.45 ABCD is a parallelogram, $\angle A = (3x + 5)^\circ$ and $\angle C = (2x + 12)^\circ$. Fin

Ans

✗ 1. 87°

✗ 2. 128°

✗ 3. 95°

✓ 4. 154°

Q.46 **A, B, U, V, Y, and Z each scored different marks. Only A has scored more than B. Only three people have scored between Z and A. U has scored less than Y but more than V. How many people have scored between V and B?**

Ans

✗ 1. Two

✗ 2. One

✓ 3. Three

✗ 4. Four

Q.47 **What should come in place of '?' in the given series based on the English alphabetical order?**
LFI KEH JDG ICF ?

Ans

✗ 1. HBF

✓ 2. HBE

✗ 3. HCF

✗ 4. HCE

black

Q.48 **Excessive input of nutrients such as nitrates and phosphates into a water body, resulting in algal bloom and depletion of dissolved oxygen, is termed as_____.**

Ans

✗ 1. Acidification

✗ 2. Biomagnification

✗ 3. Desertification

✓ 4. Eutrophication

Q.49 **Select the pair that follows the same pattern as that followed by the two pairs given below. Both pairs follow the same pattern.**

DTP : ARS
GPN : DNQ

Ans

✓ 1. EYQ : BWT

✗ 2. FJU : CHW

✗ 3. NQQ : KNR

✗ 4. NIR : KGT

Q.50 **Which of the following Middle Eastern countries entered into a bilateral investment agreement with India that came into force in July 2026, to create a secure and modern legal framework for cross-border investments?**

Ans

✓ 1. State of Israel

✗ 2. State of Qatar

✗ 3. Kingdom of Saudi Arabia

✗ 4. United Arab Emirates

Q.51 **What is the main reason for the development of planetary wind patterns on Earth?**

Ans

✗ 1. Topography of mountain ranges

✗ 2. Gravitational pull of moon and sun

✓ 3. Uneven solar heating at different latitudes

✗ 4. Presence of large ocean bodies

Q.52 **Which process is responsible for causing muscle cramps during sudden physical activity due to a lack of oxygen?**

Ans

✗ 1. Photosynthesis in muscles

✗ 2. Aerobic respiration in muscles

✗ 3. Fermentation in yeast

✓ 4. Anaerobic respiration in muscles

Q.53 **The 1991 devaluation of the Indian rupee was primarily aimed at which of the following?**

Ans

✗ 1. Controlling inflation in the country through reduced money supply in the economy

✗ 2. Encouraging foreign investment by making import items relatively cheaper

✓ 3. Resolving the balance of payments crisis and increasing foreign exchange inflows

✗ 4. Limiting government borrowing from domestic banks to increase their efficiency

Q.54 **Which reaction represents the combination of a non-metal with oxygen?**

Ans

✗ 1. $2Na + Cl_2 \rightarrow 2NaCl$

✗ 2. $CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$

✓ 3. $C + O_2 \rightarrow CO_2$

✗ 4. $CaCO_3 \rightarrow CaO + CO_2$

blackbook

Q.55 **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 is the one that 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. HK-OF
- ✓ 2. LO-SI
- ✗ 3. JM-QH
- ✗ 4. FI-MD

Q.56 **When was the Jawahar Rozgar Yojana launched in India by merging the National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) to provide employment to the rural poor?**

Ans
- ✗ 1. 1979
- ✓ 2. 1989
- ✗ 3. 1969
- ✗ 4. 1999

Q.57 **According to the Cartesian sign convention for spherical lenses, what is the sign of the object distance for a real object placed in front of the lens?**

Ans
- ✗ 1. Object distance is zero
- ✗ 2. Object distance depends on the type of lens
- ✓ 3. Object distance is negative
- ✗ 4. Object distance is positive

Q.58 **Which of the following statements explains how genetic variation produced by meiosis helps some individuals survive?**

Ans
- ✗ 1. Survival is determined only by the original genetic code, not variations
- ✗ 2. All animals have identical traits, so all survive equally
- ✗ 3. Animals with more chromosomes are always better adapted
- ✓ 4. Meiotic variations provide traits better suited to new conditions

Q.59 **A dining table set is listed at ₹20,000. A store offers successive discounts of 10% and 20% on this price. What is the final price the customer pays after both discounts are applied?**

Ans
- ✗ 1. ₹16,000
- ✓ 2. ₹14,400
- ✗ 3. ₹15,000
- ✗ 4. ₹12,000

Q.60 **The Great Indian Desert lies towards which margin of the Aravali Range?**

Ans
- ✓ 1. Western margin
- ✗ 2. Northern margin
- ✗ 3. Southern margin
- ✗ 4. Eastern margin

Q.61 **Which statement best explains how lymph returns excess tissue fluid to circulation?**

Ans
- ✗ 1. Lymph absorbs all plasma from the tissues to prevent swelling
- ✗ 2. Lymph releases red blood cells directly into tissue spaces
- ✗ 3. Lymph pumps fluid directly into the chambers of the heart
- ✓ 4. Lymph drains excess fluid from extracellular space back into the blood

blackbook

Q.62 **Why is sodium hydroxide widely used in manufacturing soaps and detergents industrially?**

Ans
- ✗ 1. It increases hardness of soap products
- ✓ 2. It reacts with fats forming soap and glycerol
- ✗ 3. It acts as bleaching agent during washing
- ✗ 4. It absorbs moisture from surrounding air

Q.63 **Refer to the following letter, symbol series and answer the question. Counting to be done from left to right only.**
(Left) U % & T # £ C £ W N Q @ V T € G # * T $ U # (Right)
How many such letters are there each of which is immediately preceded by a letter and also immediately followed by a symbol?

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

Q.64 **What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and 'x' and '÷' are interchanged?**
25 ÷ 3 + 36 x 4 - 7 = ?

Ans
- ✓ 1. 73
- ✗ 2. 71
- ✗ 3. 72
- ✗ 4. 74

Q.65 **India's first-ever open-sea Marine Fish Farming project was inaugurated from which of the following locations in January 2026?**

Ans
- ✓ 1. Andaman Sea
- ✗ 2. Lakshadweep Sea
- ✗ 3. Bay of Bengal
- ✗ 4. Arabian Sea

Q.66 **Which European power established its first factory at Masulipatnam in 1605 and later made Pulicat its headquarters in India?**

Ans
- ✗ 1. French
- ✓ 2. Dutch
- ✗ 3. Portuguese
- ✗ 4. English

Q.67 **Which region is recognised as India's oldest crude-petroleum-producing area, with Digboi as its earliest field?**

Ans
- ✗ 1. Rajasthan
- ✗ 2. Tamil Nadu
- ✓ 3. Assam
- ✗ 4. Gujarat

Q.68 **What should come in place of the question mark (?) in the given series?**

41 52 64 77 91 106 ?

Ans
- ✗ 1. 120
- ✗ 2. 125
- ✓ 3. 122
- ✗ 4. 118

blackbook

Q.69 **23 is related to 276 following a certain logic. Following the same logic, 20 is related to 240. To which of the following is 28 related, following the same logic?**
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding to/subtracting from/multiplying with 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

Ans
✗ 1. 348
✗ 2. 356
✓ 3. 336
✗ 4. 372

Q.70 **Find the angle of elevation of the sun, when the length of the shadow of a electric pole is same as the height of the pole.**

Ans
✗ 1. 60^{o}
✗ 2. 90^{o}
✓ 3. 45^{o}
✗ 4. 30^{o}

Q.71 **Refer to the following letter, symbol series and answer the question. Counting to be done from left to right only.**
(Left) L C * F A J / ^ Z O B O T M Q ? @ F C % T (Right)
How many such symbols are there each of which is immediately preceded by a symbol and also immediately followed by a letter?

Ans
✗ 1. Four
✓ 2. Two
✗ 3. One
✗ 4. Three

Q.72 **Select the pair that follows the same pattern as the one followed by the two pairs given below. Both pairs follow the same pattern.**

IQI : GSK
OMP : MOR

Ans
✗ 1. SMJ : QOK
✓ 2. DVR : BXT
✗ 3. GWS : EXU
✗ 4. LKC : JMD

Q.73 **A body is said to be in uniform motion when it:**

Ans
✓ 1. covers equal distances in equal intervals of time
✗ 2. covers unequal distances in equal intervals of time
✗ 3. speeds up and slows down repeatedly
✗ 4. changes its direction continuously

Q.74 **If a silver spoon turns black after several months of use, which chemical reaction has most likely occurred?**

Ans
✗ 1. Silver has reacted with moisture to form silver hydroxide.
✓ 2. Silver has reacted with sulphur in the air to form silver sulphide.
✗ 3. Silver has reacted with carbon dioxide to form silver carbonate.
✗ 4. Silver has reacted with oxygen to form silver oxide.

blackbook

Q.75 **A certain sum of money, when invested at simple interest, amounts to ₹1,750 in 2 years and ₹2,000 in 4 years. Find the rate of interest per annum, rounded off to two decimal places.**

Ans

✗ 1. 9.33%

✓ 2. 8.33%

✗ 3. 10.33%

✗ 4. 7.33%

Q.76 **168 is related to 19 following a certain logic. Following the same logic, 144 is related to 16. To which of the following is 128 related, following the same logic?**
(NOTE: Operations should be performed on the whole numbers, without breaking down the numbers into their constituent digits. E.g. 13 – Operations on 13 such as adding to/subtracting from/multiplying with 13 can be performed. Breaking down 13 into 1 and 3 and then performing mathematical operations on 1 and 3 is not allowed.)

Ans

✓ 1. 14

✗ 2. 19

✗ 3. 16

✗ 4. 21

Q.77 **What is the hardest natural substance known, which is also an allotrope of carbon?**

Ans

✗ 1. Charcoal

✗ 2. Graphite

✗ 3. Amorphous carbon

✓ 4. Diamond

Q.78 **What kind of tissue do plants lack for conducting immediate responses to stimuli?**

Ans

✗ 1. Meristematic tissue

✗ 2. Epidermal tissue

✗ 3. Vascular tissue

✓ 4. Nervous tissue

Q.79 The total surface area of a cylindrical solid is 792 cm^2. If its base diameter is 12 cm, t what is the height (in cm) of the cylindrical solid?

$\left(\text{Take } \pi = \frac{22}{7}\right)$

Ans

✗ 1. 12

✗ 2. 13

✓ 3. 15

✗ 4. 14

Q.80 **All 103 people are standing in a row facing North. Mr. Sonu is 7th from the right end while Mr. Pick is 77th from the left end. How many people are there between Mr. Sonu and Mr. Pick?**

Ans

✗ 1. 17

✗ 2. 12

✓ 3. 19

✗ 4. 15

Q.81 **If the total sum of 9 numbers is 81, what is their average?**

Ans

✗ 1. 10

✗ 2. 19

✓ 3. 9

✗ 4. 8

Black

Q.82 **Which of the following leads to genetic variation among siblings?**

Ans
- ✔ 1. The random assortment of chromosomes during meiosis
- ✘ 2. The perfect replication of DNA without errors
- ✘ 3. Changes directly caused by external environmental factors
- ✘ 4. The identical division of cells through mitosis

Q.83 **In a certain code language,**
'A @ B' means 'A is the brother of B',
'A ^ B' means 'A is the father of B',
'A ≠ B' means 'A is the son of B' and
'A ≥ B' means ' A is the wife of B'.
Based on the above, how is P related to X if 'P ≥ Q ≠ V ^ W @ X'?

Ans
- ✘ 1. Sister
- ✔ 2. Brother's wife
- ✘ 3. Sister's daughter
- ✘ 4. Daughter

Q.84 **How does the muscular tongue contribute to the process of digestion in the mouth?**

Ans
- ✔ 1. By mixing food with saliva and aiding in chewing
- ✘ 2. By secreting digestive enzymes into the mouth
- ✘ 3. By producing mucus to protect the mouth lining
- ✘ 4. By transporting food directly to the stomach

Q.85 **What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and 'x' and '÷' are interchanged?**
45 ÷ 5 - 290 x 5 + 31 =?

Ans
- ✘ 1. 260
- ✘ 2. 264
- ✔ 3. 252
- ✘ 4. 270

Q.86 **The extensive Northern Plains of India were primarily formed by the long-term depositional activities of which of the following river systems?**

Ans
- ✔ 1. Indus, Ganga, and Brahmaputra river systems
- ✘ 2. Sabarmati, Luni, and Mahi river systems
- ✘ 3. Godavari, Krishna, and Kaveri river systems
- ✘ 4. Narmada, Tapi, and Mahanadi river systems

Q.87 **A glowing electric bulb and an electric heater are kept inside two separate closed boxes. After some time, both boxes become warm. Which form of energy is finally transferred to the surroundings from both boxes?**

Ans
- ✔ 1. Thermal (heat) energy
- ✘ 2. Light energy
- ✘ 3. Electrical energy
- ✘ 4. Chemical energy

Q.88 If the variance of the data 6, 10, 14, 18, 22 is σ^2, what is the value of σ^2

Ans
- ✘ 1. 28
- ✘ 2. 36
- ✘ 3. 30
- ✔ 4. 32

Q.89 **Which expression gives the maximum number of electrons that can occupy the nth energy level of an atom, where n is the shell number?**

Ans

✗ 1. n^2

✗ 2. 2n

✗ 3. n

✓ 4. $2n^2$

Q.90 **The ratio of the length to the breadth of a rectangle is 3 : 2. If the length is 18 cm, find the area (in cm^2) of the rectangle.**

Ans

✗ 1. 210

✗ 2. 144

✗ 3. 108

✓ 4. 216

Q.91 **A force is applied at the free end of a hinged rod, causing it to rotate about the hinge. What can be said about the work done by the applied force?**

Ans

✗ 1. The work done is zero because the hinge remains stationary.

✗ 2. The work done depends only on the mass of the rod.

✗ 3. The work done is negative because the rod rotates.

✓ 4. The work done is positive because the point of application of the force is displaced.

Q.92 **What is the atomic mass of a carbon atom as commonly used in science?**

Ans

✗ 1. 16 u

✗ 2. 14 u

✓ 3. 12 u

✗ 4. 1 u

Q.93 If $y - 9 = 3\sqrt{7}$, then what is the value of $\sqrt{(y-1)} - \frac{1}{\sqrt{y-1}}$?

Ans

✓ 1. $\sqrt{14}$

✗ 2. 28

✗ 3. $2\sqrt{7}$

✗ 4. $7\sqrt{2}$

Q.94 **Each vowel in the word CYCLOTOMIES 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. How many letters will appear more than twice in the group of letters thus formed?**

Ans

✗ 1. One

✗ 2. Four

✓ 3. Two

✗ 4. Three

Q.95 **Which socio-religious reform movement was founded by Raja Rammohan Roy in 1828?**

Ans

✗ 1. Prarthana Samaj promoting devotion

✗ 2. Theosophical Society promoting spirituality

✗ 3. Arya Samaj promoting Vedic reforms

✓ 4. Brahmo Samaj promoting monotheism

blackbook

Q.96 **The average marks obtained in mathematics by the students of a class was 92. The average marks obtained by the boys is 20% more than the average marks obtained by the girls. If the ratio of the number of boys to that of girls is 5 : 2, then the average marks obtained by the girls is:**

Ans

✗ 1. 80.4

✗ 2. 82

✓ 3. 80.5

✗ 4. 77

Q.97 **A sum of ₹10,000 is lent at an annual rate of 8% for 6 months, where interest is compounded half-yearly. What is the difference between the compound interest and the simple interest earned at the end of 6 months?**

Ans

✗ 1. ₹4

✗ 2. ₹2

✓ 3. ₹0

✗ 4. ₹20

Q.98 **This question is based on the following words**
(left) SOB DIG FIN JOG (right)
How many letters are there between the second letter of the second word from the right and the third letter of the second word from the left as per English alphabetical order?

Ans

✗ 1. 2

✗ 2. 0

✓ 3. 1

✗ 4. 4

Q.99 **A man can row at 8 km/h in still water. The speed of the current is 3 km/h. To go upstream a certain distance, it takes 6 hours more than going than going the same distance downstream. Find the one way distance travelled.**

Ans

✗ 1. 50 km

✗ 2. 60 km

✗ 3. 45 km

✓ 4. 55 km

Q.100 $\text{Evaluate: } \left(\frac{18}{18} \div \frac{18}{9}\right) \div \left(\frac{2}{10} \times \frac{20}{6} + \frac{2}{6}\right) + \frac{9}{11} \div \frac{18}{14} \text{ of } \frac{14}{11}$

Ans

✗ 1. 9

✓ 2. 1

✗ 3. 4

✗ 4. 2

"