



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सीईएन ०२/२०२६ - तकनीशियन ग्रेड I सिगनल और तकनीशियन ग्रेड III
CEN 02/2026 - Technician Grade I Signal and Technician Grade III



RRB TECHNICIAN GRADE I SIGNAL 2026

Technician Grade I Signal | CEN 02/2026

ENGLISH ANSWER KEY

Official Answer Key

All 2 Shifts · 09-10-2026 to 09-10-2026

Questions	100
Marking	+1 correct / -1/3 wrong
Duration	90 minutes
Sections	GA 10 · Reasoning 15 · Computers 20 · Maths 20 · Basic Sci & Engg 35

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 15 October 2026

INDEX · Click any row to open that paper

RRB Technician Grade I Signal 2026 (English) · 2 shifts

DAY	DATE	SHIFT	TIME	PAGE
Day 1	09-10-2026	Shift 2	12:45 - 14:15	3
Day 1	09-10-2026	Shift 3	16:30 - 18:00	19



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सीईएन ०२/२०२६ - तकनीशियन ग्रेड I सिगनल और तकनीशियन ग्रेड III
CEN 02/2026 - Technician Grade I Signal and Technician Grade III



Test Date	09/10/2026
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technician Grade I Signal

*** 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 : General Awareness

Q.1 In April 2026, for how long did the Union Minister of Commerce and Industry announce a fee waiver on intellectual property registrations related to the sports sector?

- Ans
- ☒ A. One year
 - ☒ B. Two years
 - ☒ C. Three years
 - ☒ D. Five years

Q.2 In January 2026, India observed National Youth Day with the theme "Ignite the Self, Impact the World" to commemorate the birth anniversary of Swami Vivekananda. The day is celebrated annually on:

- Ans
- ☒ A. 15 January
 - ☒ B. 12 January
 - ☒ C. 14 January
 - ☒ D. 13 January

Q.3 India's persistent gap in the Logistics Performance Index (LPI), notwithstanding the PM GatiShakti National Master Plan, is structurally linked to:

- Ans
- ☒ A. Fragmented multimodal coordination
 - ☒ B. Agricultural subsidy expansion
 - ☒ C. Elevated import tariff structure
 - ☒ D. Exchange rate misalignment

Q.4 Which term was used by tribal communities during the colonial period to describe the exploitative outsiders who collaborated with the British administration and oppressed the tribal population?

- Ans
- ☒ A. Jagirdars
 - ☒ B. Ryots
 - ☒ C. Sardars
 - ☒ D. Dikus

Q.5 Who earned the distinction of becoming India's 96th Chess Grandmaster in June 2026?

- Ans
- ☒ A. Pranav Venkatesh
 - ☒ B. Leon Luke Mendonca
 - ☒ C. Raunak Sadhwani
 - ☒ D. Ethan Vaz

Q.6 The Montagu-Chelmsford Reforms also known as _____.

- Ans**
- ☐ A. Indian Councils Act, 1909
 - ☐ B. Charter Act, 1853
 - ☒ C. Government of India Act, 1919
 - ☐ D. Government of India Act, 1935

Q.7 Who was elected as the first President of the Indian National Congress during its inaugural session in 1885?

- Ans**
- ☐ A. Bal Gangadhar Tilak
 - ☒ B. Womesh Chandra Banerjee
 - ☐ C. Dadabhai Naoroji
 - ☐ D. Allan Octavian Hume

Q.8 The contribution of Rukmini Devi Arundale to Indian classical dance is correctly described as which of the following?

- Ans**
- ☐ A. Reviving Odissi through archaeological reconstruction and temple sculpture interpretation
 - ☒ B. Institutionalising Bharatanatyam through systematic training while restoring its cultural prestige
 - ☐ C. Codifying Kathak performance traditions through the establishment of regional dance academies
 - ☐ D. Promoting Sattriya by introducing it into university-level performing arts education

Q.9 Which of the following animals is found in the arid areas of the Rann of Kachchh and the Thar Desert?

- Ans**
- ☐ A. Elephants
 - ☐ B. Rhesus macaque
 - ☒ C. Indian wild ass
 - ☐ D. Indian bison

Q.10 Which Act abolished the Board of Control and the Court of Directors of East India Company?

- Ans**
- ☐ A. Indian Councils Act, 1861
 - ☐ B. Charter Act, 1833
 - ☐ C. Regulating Act, 1773
 - ☒ D. Government of India Act, 1858

Section : General Intelligence and Reasoning

Q.11 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ?

: QXG :: VCL : %

- Ans**
- ☐ A. # = HIX; % = ELU
 - ☐ B. # = HOX; % = ELO
 - ☒ C. # = HOX; % = ELU
 - ☐ D. # = KOX; % = ELU

Q.12 In a certain code,
'same old habits' is coded as 'tk dh fx',
'same house beautiful' is coded as 'wj ts tk' and
'old village house' is coded as 'dh tm ts'.
(All the codes are two-letter codes only.)

What is the possible code for 'beautiful old'?

- Ans**
- ☐ A. fx ts
 - ☐ B. wj tk
 - ☒ C. wj dh
 - ☐ D. fx tm

Q.13 In a certain code language,
A + B means 'A is the sister of B'
A - B means 'A is the brother of B'
A × B means 'A is the husband of B'
A ÷ B means 'A is the mother of B'
Based on the above, how is P related to T if 'P - Q × R ÷ S + T'?

- Ans**
- ☐ A. Father's father
 - ☐ B. Mother's brother
 - ☒ C. Father's brother
 - ☐ D. Mother's father

Q.14 Refer to the following letter, symbol series and answer the question. Counting to be done from left to right only.
(Left) & Q € G @ £ Y & T N T # Z L * % * K P @ M S (Right)
How many such letters are there each of which is immediately preceded by a symbol and also immediately followed by a symbol?

- Ans**
- ☐ A. 5
 - ☒ B. 3
 - ☐ C. 6
 - ☐ D. 4

Q.15 Gor starts from Point A and drives 10 km towards north. He then takes a left turn and drives 12 km, and again turns left and drives 13 km. He then takes a left turn and drives 15 km. He takes a final left turn, drives 3 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 specified.)

- Ans**
- ☐ A. 6 km to the south
 - ☒ B. 3 km to the west
 - ☐ C. 7 km to the north
 - ☐ D. 4 km to the east

Q.16 If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '-', what will come in place of question mark '?' in the following equation?
22 D 14 A 2 C 7 B 3 = ?

- Ans**
- ☐ A. 35
 - ☐ B. 34
 - ☐ C. 33
 - ☒ D. 36

Q.17 In a certain code language, 'song card flash' is coded as 'ng nr ic' and 'card king tent' is coded as 'tf ma nr'. How is 'card' coded in the given language?

- Ans**
- ☒ A. nr
 - ☐ B. tf
 - ☐ C. ng
 - ☐ D. ic

Q.18 Each of G, H, I, J, K, L and M play a game on different days of a week, starting from Monday and ending on Sunday of the same week. M plays on the last day. Only three persons play between M and J. G plays immediately before H, and H plays immediately before J. L plays immediately before K, but L does not play on Thursday. On which day does I play the game?

- Ans**
- ☒ A. Thursday
 - ☐ B. Monday
 - ☐ C. Friday
 - ☐ D. Tuesday

Q.19 This question is based on the following words.

APE BAT SUN ANT

How many letters are there in the English alphabetical order between the third letter of the third word from the right and the first letter of the first word from the left?

- Ans**
- ☒ A. 18
 - ☐ B. 14
 - ☐ C. 12
 - ☐ D. 16

Q.20 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**
- ☐ A. MO – TV
 - ☐ B. GI – NP
 - ☒ C. BC – KL
 - ☐ D. DF – KM

Q.21 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ?

: BDJ :: KMS : %

- Ans**
- ☐ A. # = FRE % = ASO
 - ☐ B. # = IUN % = GIN
 - ☐ C. # = FHR % = FDO
 - ☒ D. # = FHN % = GIO

Q.22 In this question, 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.

Among 5 poles, S, L, I, G and T each having a different height, which pole is the shortest?

(I) G is shorter than T but taller than L. S is taller than L

(II) I is taller than only one pole

- Ans**
- ☐ A. Data in Statement II alone is sufficient to answer the question while data in statement I is not
 - ☐ B. Data in Statement I alone is sufficient to answer the question while data in statement II is not
 - ☒ C. Both statements I and II together (and not statement 1 alone or statement II alone) are sufficient to answer the question.
 - ☐ D. Both statements I and II together are NOT sufficient to answer the question

Q.23 23 is related to 117 following a certain logic. Following the same logic, 31 is related to 157. To which of the following is 42 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/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.)

- Ans**
- ☐ A. 207
 - ☐ B. 204
 - ☐ C. 216
 - ☒ D. 212

Q.24 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

YBZ 68 XAY 79 WZX 90 VYW 101 ?

- Ans**
- ☐ A. UXV 111
 - ☒ B. UXV 112
 - ☐ C. UYV 112
 - ☐ D. UYV 111

Q.25 What should come in place of the question mark (?) in the given series?

54 68 88 114 146 184 ?

- Ans**
- ☐ A. 119
 - ☒ B. 228
 - ☐ C. 223
 - ☐ D. 231

Section : Basics of Computers and Application

Q.26 A research botanist plans to analyze thousands of plant DNA sequences using computer software. In this scenario, which aspect best illustrates why computers are essential for modern biological research?

- Ans**
- ☐ A. They organize digital files for long-term archives
 - ☐ B. They automate basic lab equipment control for researchers
 - ☐ C. They ensure error-free data collection during experiments
 - ☒ D. They enable rapid processing of extensive genetic datasets

Q.27 Imagine a new productivity suite is installed on a desktop computer with multiple user profiles. If a user wants to launch the spreadsheet tool so that it opens in a session that does not interfere with other users' settings, which action would best accomplish this?

- Ans**
- ☐ A. Launch the application from the desktop shortcut as usual.
 - ☒ B. Use the operating system's 'Run as different user' function to start the application.
 - ☐ C. Set the application to open in safe mode from the start menu.
 - ☐ D. Adjust the application's compatibility mode before opening.

Q.28 In a newly designed operating system, an application called 'QuickSwitch' claims to instantly relocate minimized icons from the right end of the task bar to a contextual group within the start menu when a user activates 'focus mode'. After enabling 'focus mode', a user notices that all minimized icons have disappeared from the task bar, but only a subset of them appear within the start menu's group. Which explanation most accurately accounts for this selective relocation?

- Ans**
- ☒ A. Minimized icons representing background services are not moved into the start menu group by 'QuickSwitch'.
 - ☐ B. Minimized windows are not allowed in focus mode, so all should have been removed from the start menu group.
 - ☐ C. The task bar was already full, so only some minimized icons could be transferred to the start menu group.
 - ☐ D. User permission settings prevent some minimized windows from being relocated to the start menu group.

- Q.29** When connecting to the Internet at home, which hardware device typically acts as the gateway between your local network and the Internet Service Provider?
- Ans**
- ☐ A. Modem
 - ☐ B. Switch
 - ☒ C. Router
 - ☐ D. Hub
- Q.30** In a company newsletter, how can an editor subtly emphasize the main message within a lengthy paragraph without breaking the flow or inserting extra symbols?
- Ans**
- ☐ A. Adding an extra tab at the beginning of the paragraph
 - ☐ B. Changing the font to uppercase for the entire paragraph
 - ☒ C. Adjusting the line spacing to create gentle separation for emphasis
 - ☐ D. Shifting the paragraph to the left margin for attention
- Q.31** Which set of actions is least likely to compromise your smartphone's security when downloading apps?
- Ans**
- ☐ A. Granting all permissions requested by apps
 - ☐ B. Disabling app security settings before installation
 - ☐ C. Using third-party app stores and ignoring permissions
 - ☒ D. Downloading only from the official app store and checking app permissions
- Q.32** A user wants to insert a PDF document into a slide, allowing viewers to open the file during the presentation. Which option best accomplishes this?
- Ans**
- ☐ A. Insert the PDF as a picture using 'Insert Picture'
 - ☐ B. Insert the PDF through 'Insert Media'
 - ☐ C. Add a hyperlink to the PDF using 'Insert Hyperlink'
 - ☒ D. Insert the PDF as an object using 'Insert Object' and choose 'Create from File'
- Q.33** On a museum's digital interactive kiosk, visitors select a painting to display more information. Which device most likely allows them to make their selection?
- Ans**
- ☐ A. Barcode scanner device
 - ☒ B. Touch-enabled screen panel
 - ☐ C. Wireless keyboard input
 - ☐ D. Thermal receipt printer
- Q.34** A logistics company is designing a custom device to track real-time vehicle data, where rapid analysis and decision-making are critical. Which component's architectural selection will most fundamentally determine the device's ability to process raw sensor inputs, execute route optimization algorithms, and coordinate output to other subsystems?
- Ans**
- ☐ A. Storage Device
 - ☐ B. Power Supply
 - ☐ C. Memory
 - ☒ D. Central Processing Unit
- Q.35** What is the main advantage of a fiber-optic internet connection compared to a cable internet connection?
- Ans**
- ☒ A. Higher data transmission speeds
 - ☐ B. Greater reliability for gaming
 - ☐ C. Better energy efficiency
 - ☐ D. Lower cost for home users

- Q.36** A team is creating a bilingual newsletter in MS Word, requiring both English and Japanese text blocks. While adjusting the document's appearance, they notice that the page numbers on some pages shift position and overlap with the main content after switching from portrait to landscape orientation mid-document. Which page formatting feature should they prioritize to resolve this specific issue efficiently?
- Ans**
- ☐ A. Insert section breaks but keep default margin settings
 - ☐ B. Switch the entire document to a single page orientation
 - ☐ C. Adjust the main text margins for all pages
 - ☒ D. Adjust the header and footer margins for the affected sections
- Q.37** In an encrypted financial spreadsheet, Miranda wants to reference the total from a quarterly sales table in another sheet, but the table's cells are dynamically sorted every time she opens the file. Which cell referencing method will guarantee her formula consistently returns the current total, regardless of how the table is sorted or moved within the sheet?
- Ans**
- ☐ A. Referencing the total with a relative cell address like C10
 - ☐ B. Linking to the total cell using Sheet1!C10 as the reference
 - ☒ C. Defining a named range for the total cell and using the name in the formula
 - ☐ D. Using an absolute reference such as \$C\$10 in the formula
- Q.38** A research team is designing a custom computing device for analyzing genetic patterns. During prototype testing, the device frequently produces inconsistent results when performing identical analysis sequences. Given that the main storage and peripheral hardware have been independently validated, which specific aspect of the central processing unit's design is most likely responsible for these inconsistencies?
- Ans**
- ☒ A. The timing alignment between cache memory and main storage interfaces
 - ☐ B. The scheduling of instruction prefetching relative to bus arbitration logic
 - ☐ C. The coordination between the control unit and arithmetic logic unit during simultaneous instruction execution
 - ☐ D. The buffering process within the main storage interface circuitry
- Q.39** After starting PowerPoint, which option must be selected to begin with a completely blank presentation?
- Ans**
- ☐ A. Open Existing
 - ☐ B. Content Layout
 - ☒ C. Blank Presentation
 - ☐ D. Picture Album
- Q.40** Which of the following is an example of a symmetric encryption algorithm commonly used in modern systems?
- Ans**
- ☐ A. RSA algorithm
 - ☐ B. ElGamal encryption
 - ☒ C. Advanced Encryption Standard (AES)
 - ☐ D. SHA-256 function
- Q.41** How does data encryption contribute to maintaining data integrity during communication?
- Ans**
- ☐ A. It enables easy copying of files to multiple locations.
 - ☒ B. It compresses data for faster transmission across networks.
 - ☐ C. It allows only certain users to access the data files.
 - ☐ D. It makes unauthorized alteration of data more difficult to detect and correct.
- Q.42** What is the main reason for implementing computer security measures in organizations?
- Ans**
- ☐ A. To reduce power consumption in devices
 - ☐ B. To improve computer speed and performance
 - ☒ C. To protect sensitive information from unauthorized access
 - ☐ D. To make software updates easier to manage

Q.43 Which option is primarily used for viewing speaker notes while giving a presentation in MS PowerPoint?

- Ans
- ☐ A. Outline View
 - ☐ B. Slide Show View
 - ☒ C. Notes Page View
 - ☐ D. Reading View

Q.44 An editor is preparing a technical manual in MS Word where each section must begin with a unique header and certain paragraphs require precise alignment adjustments. Midway, she notices that some headers are misaligned and a few paragraphs exhibit inconsistent spacing after pasting from various sources. Which action sequence best ensures all headers and body text follow a uniform format while preserving unique header attributes?

- Ans
- ☒ A. Apply a custom style to headers, use Format Painter on headers only, then clear formatting and apply a consistent style to the affected paragraphs
 - ☐ B. Manually adjust alignment for each header and paragraph, leaving styles unchanged
 - ☐ C. Apply Normal style to all content, then reapply header formatting individually
 - ☐ D. Copy formatting from body text to headers and paragraphs, then adjust headers manually

Q.45 While preparing a digital inventory sheet in a spreadsheet, Priya wants to record both the shipment date (as 08-06-2024) and the quantity (as 0075) in adjacent cells. Which approach best avoids unintended auto-formatting issues in MS Excel for both entries?

- Ans
- ☒ A. Entering an apostrophe before each entry to retain original format
 - ☐ B. Typing the date as 08-06-2024 and the number as 0075 directly
 - ☐ C. Inserting both values using formulas referencing another sheet
 - ☐ D. Formatting both cells as 'General' before entry

Section : Mathematics

Q.46 The HCF and LCM of two numbers are 14 and 420, respectively. If one of the numbers is 84, find the other number.

- Ans
- ☐ A. 60
 - ☐ B. 56
 - ☐ C. 98
 - ☒ D. 70

Q.47 Find the quadratic equation whose roots are $5 + 2\sqrt{3}$ and $5 - 2\sqrt{3}$.

- Ans
- ☐ A. $x^2 + 12x + 13 = 0$
 - ☒ B. $x^2 - 10x + 13 = 0$
 - ☐ C. $x^2 - 12x + 13 = 0$
 - ☐ D. $x^2 + 10x + 13 = 0$

Q.48 If $x^2 + ax + b = 0$ and $x^2 + bx + a = 0$ have exactly one root in common, what is the relationship between a and b?

- Ans
- ☐ A. $a - b = 0$
 - ☐ B. $a + b = 0$
 - ☒ C. $a + b = -1$
 - ☐ D. $a + b = 1$

Q.49 If $\cot(A - B) = \sqrt{3}$, then find the value of $\frac{\cot B - \cot A}{\cot A \cot B + 1} + \frac{\tan A - \tan B}{1 + \tan A \tan B}$

- Ans
- ☒ A. $\frac{2 - \sqrt{3}}{3}$
 - ☒ B. $\frac{2\sqrt{3}}{3}$
 - ☒ C. $\frac{1}{\sqrt{3}}$
 - ☒ D. $\frac{3\sqrt{3} + 2}{2}$

Q.50 If the 10th term of an arithmetic progression is 20 and the common difference is 2, find the 15th term of the arithmetic progression.

- Ans
- ☒ A. 30
 - ☒ B. 40
 - ☒ C. 32
 - ☒ D. 35

Q.51 Simplify: $\frac{(\cos \theta - \sin \theta)(1 + \tan \theta + \cot \theta)}{1 + \sin \theta \cos \theta}$

- Ans
- ☒ A. $\sec \theta - \operatorname{cosec} \theta$
 - ☒ B. $\operatorname{cosec} \theta - \sec \theta$
 - ☒ C. $\cos \theta + \sin \theta$
 - ☒ D. $\operatorname{cosec} \theta + \sec \theta$

Q.52 The variance of data set I, of 14 readings is 6.76. Data set II, is formed by multiplying each of the readings of data set I by 9 and data set III is formed by adding 7 to all the readings of data set I. Find the average of the standard deviations of data sets II and III.

- Ans
- ☒ A. 16.5
 - ☒ B. 13
 - ☒ C. 10.4
 - ☒ D. 8.7

Q.53 A product is made by assembling two parts, A and B. Out of 105 Part A units, 15 are defective, and out of 104 Part B units, 8 are defective. What is the probability that a product assembled using one Part A and one Part B has no defective parts?

- Ans
- ☒ A. $\frac{65}{91}$
 - ☒ B. $\frac{78}{91}$
 - ☒ C. $\frac{72}{91}$
 - ☒ D. $\frac{84}{91}$

Q.54 The sides of two similar triangles are in the ratio 4 : 7. If the area of the smaller triangle is 144 cm^2 , find the area of the larger triangle.

- Ans
- ☒ A. 480 cm^2
 - ☒ B. 454 cm^2
 - ☒ C. 484 cm^2
 - ☒ D. 441 cm^2

Q.55 The number of proper non-empty subsets of a set with 10 elements are ____.

- Ans
- ☐ A. 1021
 - ☒ B. 1022
 - ☐ C. 1020
 - ☐ D. 1023

Q.56 A number is chosen randomly from 1 to 100. What is the probability that the number is neither divisible by 2 nor by 5?

- Ans
- ☐ A. $\frac{3}{5}$
 - ☐ B. $\frac{3}{4}$
 - ☐ C. $\frac{1}{3}$
 - ☒ D. $\frac{2}{5}$

Q.57 In a right circular cone, the base has a radius of 4.2 cm and the height is 30 cm. A cross-section is made at the midpoint of the height, parallel to the base. Find the volume of the smaller cone between the cross-section and the vertex. (Use $\pi = 22/7$)

- Ans
- ☐ A. 138.6 cm^3
 - ☒ B. 69.3 cm^3
 - ☐ C. 277.2 cm^3
 - ☐ D. 207.9 cm^3

Q.58 The 5th term of an arithmetic progression is 20, and the sum of the first 10 terms is 290. Find the first term and the common difference of the arithmetic progression.

- Ans
- ☐ A. 52 and 18
 - ☐ B. 58 and 10
 - ☐ C. -29 and 9
 - ☒ D. -52 and 18

Q.59 Let $A = \{2, 4, 6, \dots, 20\}$, $B = \{3, 6, 9, \dots, 30\}$, then the number of elements in $A - B$ are ____.

- Ans
- ☐ A. 9
 - ☒ B. 7
 - ☐ C. 6
 - ☐ D. 8

Q.60 In a school, there are 68 teachers who teach Mathematics or Physics. Of these, 55 teach Mathematics and 45 teach both Physics and Mathematics. How many teach Physics?

- Ans
- ☐ A. 64
 - ☐ B. 50
 - ☐ C. 57
 - ☒ D. 58

Q.61 The volume of a closed rectangular box is 7500 cm^3 , and its dimensions are in the ratio 3:4:5. The box is to be painted on all outer surfaces at a rate of ₹4/cm². If an 18% GST is applied on the painting cost, what is the total amount to be paid?

- Ans
- ☐ A. ₹10,250
 - ☐ B. ₹12,100
 - ☒ C. ₹11,092
 - ☐ D. ₹11,540

Q.62 The point P(4,5) divides AB internally in the ratio 1:1, where A(2,3) and B(x,y). What are the coordinates (x,y)?

- Ans**
- ☒ A. (6,7)
 - ☐ B. (5,6)
 - ☐ C. (3,4)
 - ☐ D. (2,5)

Q.63 A(2,3), B(4,7) and C(6,11) are three points in a plane. Choose the correct statement.

- Ans**
- ☐ A. $AB=CA$
 - ☐ B. AB is perpendicular to BC
 - ☒ C. A, B and C are collinear
 - ☐ D. A, B and C are vertices of a triangle

Q.64 The LCM of the numbers 5, 15.5 and 0.83 is:

- Ans**
- ☐ A. 12695
 - ☐ B. 12780
 - ☐ C. 12555
 - ☒ D. 12865

Q.65 A manufacturing unit produces widgets with lengths measured in millimeters over five different shifts. The lengths recorded during each shift are:

Shift 1: 45 mm, 48 mm, 43 mm

Shift 2: 50 mm, 52 mm, 49 mm

Shift 3: 47 mm, 45 mm, 51 mm

Shift 4: 46 mm, 50 mm, 48 mm

Shift 5: 49 mm, 47 mm, 44 mm

Find the range of the entire data set.

- Ans**
- ☐ A. 7 mm
 - ☐ B. 8 mm
 - ☒ C. 9 mm
 - ☐ D. 10 mm

Section : Basic Science and Engineering

Q.66 A body is moved to a planet where the acceleration due to gravity is reduced by 30% compared with Earth. Assuming its mass remains unchanged, which statement is correct?

- Ans**
- ☐ A. Its weight becomes $10/7$ times its Earth weight.
 - ☐ B. The body's mass decreases by 30%.
 - ☒ C. Its weight becomes 70% of its weight on Earth.
 - ☐ D. Both its mass and weight decrease by 30%.

Q.67 A body weighs W_1 at a place where the acceleration due to gravity is g_1 . At another place, its weight becomes $5/3 W_1$. Assuming the mass of the body remains constant, what is the ratio $g_2:g_1$?

- Ans**
- ☒ A. 5 : 3
 - ☐ B. 3 : 5
 - ☐ C. 2 : 5
 - ☐ D. 5 : 2

Q.68 What is the binary equivalent of the decimal number 45?

- Ans**
- ☐ A. 110101
 - ☐ B. 101011
 - ☒ C. 101101
 - ☐ D. 100111

Q.69 An Amperian loop encloses three conductors carrying currents of 4 A, 3 A, and 1 A. Two currents are directed into the page and one is directed out of the page. Which additional information is required to determine the enclosed current?

- Ans
- ☐ A. The radius of the loop
 - ☐ B. The material of the conductors
 - ☒ C. The direction of each current
 - ☐ D. The resistance of the conductors

Q.70 A resistor is connected to an ideal DC voltage source. The applied voltage is doubled while the resistor remains at a constant temperature. Which of the following statements is correct?

- Ans
- ☒ A. The current doubles and the power dissipated becomes four times the original value.
 - ☐ B. The current becomes four times the original value while the power doubles.
 - ☐ C. The current doubles and the power doubles.
 - ☐ D. The current remains unchanged while the power doubles.

Q.71 A digital voltmeter is required to measure a DC signal with superimposed AC noise. Which type of DVM is most likely to produce the most accurate reading?

- Ans
- ☒ A. Integrating type DVM because it averages the input over the conversion period
 - ☐ B. Successive approximation DVM because it completes conversion in a fixed and relatively short time
 - ☐ C. Voltage-to-frequency conversion DVM because it requires long counting intervals for high accuracy
 - ☐ D. Ramp type DVM because its conversion time varies with input voltage

Q.72 If a conductor carries a current of 3 A for 20 seconds, how much charge passes through a cross-section of the conductor?

- Ans
- ☐ A. 23 coulombs
 - ☐ B. 17 coulombs
 - ☐ C. 6 coulombs
 - ☒ D. 60 coulombs

Q.73 For a rectifier circuit, the form factor (K_f) is reduced while all other operating conditions remain unchanged. What is the effect on the ripple factor?

- Ans
- ☒ A. It decreases because the ripple factor depends directly on the form factor.
 - ☐ B. It increases because the DC component decreases.
 - ☐ C. It remains unchanged because ripple factor is independent of form factor.
 - ☐ D. It first decreases and then increases.

Q.74 If a JFET is operating in the ohmic region, how does its behavior compare to its operation in the saturation region?

- Ans
- ☐ A. It behaves as a constant-current source.
 - ☐ B. It amplifies signals in the ohmic region
 - ☐ C. It is completely off in the ohmic region
 - ☒ D. It acts as a voltage-controlled resistor in the ohmic region

Q.75 A negative charge is moved from a point at +5 V to another point at +15 V. What happens to its electric potential energy?

- Ans
- ☒ A. It decreases.
 - ☐ B. It remains unchanged.
 - ☐ C. It increases.
 - ☐ D. It becomes zero.

Q.76 The masses of atoms and subatomic particles are extremely small, so scientists use the atomic mass unit (u) instead of the kilogram. What is the approximate value of 1 u in SI units?

- Ans**
- ☐ A. 1.66×10^{-21} kg
 - ☐ B. 1.66×10^{-30} kg
 - ☐ C. 1.66×10^{-24} kg
 - ☒ D. 1.66×10^{-27} kg

Q.77 A homogeneous material is altered so that its mass becomes three times its original value while its volume becomes twice its original value. What is the new density compared to the original density?

- Ans**
- ☒ A. 3/2 times the original density
 - ☐ B. Twice the original density
 - ☐ C. Three times the original density
 - ☐ D. 2/3 times the original density

Q.78 Which hexadecimal digit is equivalent to the decimal number 12?

- Ans**
- ☐ A. D
 - ☐ B. A
 - ☒ C. C
 - ☐ D. B

Q.79 Which addressing mode in the 8051 microcontroller allows data to be accessed through an address stored in a register (such as R0, R1, or DPTR)?

- Ans**
- ☐ A. Immediate Addressing
 - ☒ B. Register Indirect Addressing
 - ☐ C. Direct Addressing
 - ☐ D. Indexed Addressing

Q.80 If the forward voltage drop of each conducting diode is V_f , which expression gives the peak output voltage of a full-wave bridge rectifier in terms of the input peak voltage of the transformer secondary $V_{p(in)}$?

- Ans**
- ☒ A. $V_{p(out)} = V_{p(in)} - 2V_f$
 - ☐ B. $V_{p(out)} = V_{p(in)} - V_f$
 - ☐ C. $V_{p(out)} = V_{p(in)} + 2V_f$
 - ☐ D. $V_{p(out)} = 2V_{p(in)} - 2V_f$

Q.81 Scientists around the world use a common standard unit so that measurements of mass are consistent and comparable. Which SI unit serves this purpose?

- Ans**
- ☐ A. Tonne
 - ☐ B. Pound
 - ☒ C. Kilogram
 - ☐ D. Gram

Q.82 A designer is developing an 8051-based embedded system that requires storage of a large amount of frequently changing data exceeding the internal RAM capacity, while keeping the program code unchanged. Which memory configuration is most suitable?

- Ans**
- ☐ A. Code in external RAM, data in internal RAM
 - ☐ B. Code and data both in ROM
 - ☒ C. Code in ROM, data in external RAM
 - ☐ D. Code in internal RAM, data in ROM

Q.83 A charge of 5 C is moved through a potential difference of 12 V. What is the work done by the electric field?

- Ans ☒ A. 60 J
☐ B. 120 J
☐ C. 17 J
☐ D. 50 J

Q.84 A long solenoid carries a steady current. An Amperian loop is chosen completely outside the solenoid. What is the magnetic field along this loop according to the ideal solenoid model?

- Ans ☒ A. Zero
☐ B. Maximum
☐ C. Equal to the field inside the solenoid
☐ D. Uniform and non-zero

Q.85 Which electrical bias is required for an LED to emit light?

- Ans ☐ A. Reverse bias
☐ B. Open circuit condition
☒ C. Forward bias
☐ D. Zero bias

Q.86 A voltmeter is connected across a battery in a simple circuit. What does it measure?

- Ans ☐ A. It measures the current flowing through the battery.
☐ B. It measures the resistance of the entire circuit.
☐ C. It measures the total power consumed by the circuit.
☒ D. It measures the potential difference across the battery terminals.

Q.87 A solid metal block and a gas enclosed in a flexible balloon are subjected to the same increase in external pressure. Which one experiences the greater increase in density?

- Ans ☐ A. Both experience the same increase in density.
☒ B. The gas inside the balloon
☐ C. The solid metal block
☐ D. Neither undergoes any change in density.

Q.88 Which of the following statements is correct, if three resistors of equal value are connected in parallel across a constant voltage source?

- Ans ☒ A. Each resistor carries an equal current
☐ B. Current depends on the resistor's position
☐ C. The total current is the same as for one resistor
☐ D. The resistor nearest the source carries the most current

Q.89 Which of the following is NOT a characteristic of a good conductor?

- Ans ☐ A. Many free electrons available
☐ B. Metallic bonding structure
☐ C. Low electrical resistance
☒ D. High electrical resistance

Q.90 A wire is stretched uniformly at a constant temperature without changing its material. Which of the following physical quantities remains unchanged?

- Ans ☐ A. Length
☐ B. Resistance
☒ C. Resistivity
☐ D. Cross-sectional area

Q.91 If an ideal voltmeter is connected in parallel across a resistor in a simple series circuit, what effect does it have on the circuit's total current?

- Ans**
- ☒ A. The total current remains unchanged because the voltmeter draws no current
 - ☐ B. The total current drops to zero because the voltmeter blocks current
 - ☐ C. The total current decreases because the voltmeter adds resistance
 - ☐ D. The total current increases because the voltmeter provides a new path

Q.92 The SI unit of resistivity is:

- Ans**
- ☐ A. S/m
 - ☒ B. $\Omega \text{ m}$
 - ☐ C. Ω
 - ☐ D. Ω/m

Q.93 Which scenario will result in the maximum power dissipation in a copper conductor, assuming the same applied voltage?

- Ans**
- ☒ A. A short, thick copper conductor will dissipate more power under the same voltage.
 - ☐ B. All copper conductors will dissipate the same power under the same voltage.
 - ☐ C. A long, thin copper conductor will dissipate more power under the same voltage.
 - ☐ D. A medium-length, medium-thick copper conductor will dissipate more power under the same voltage.

Q.94 A circuit has three branches with resistors: 2 ohms, 4 ohms, and 8 ohms in parallel. Which statement correctly describes the current through the 2 ohm resistor compared to the 8 ohm resistor?

- Ans**
- ☒ A. The current through the 2 ohm resistor is greater than that through the 8 ohm resistor
 - ☐ B. The current through the 2 ohm resistor is equal to that through the 8 ohm resistor
 - ☐ C. The current through the 2 ohm resistor is less than that through the 8 ohm resistor
 - ☐ D. The current through the 2 ohm resistor is zero compared to the 8 ohm resistor

Q.95 A laboratory compares measurements obtained by three teams using identical instruments and procedures. If the results differ significantly, what does this indicate?

- Ans**
- ☒ A. The reproducibility of the measurements is low.
 - ☐ B. The instruments are malfunctioning.
 - ☐ C. The repeatability of the measurements is high.
 - ☐ D. The measurements have high accuracy.

Q.96 A charge moves from 30 V to 10 V, losing 40 J of electric potential energy. What is the magnitude of the charge?

- Ans**
- ☐ A. 1 C
 - ☐ B. 3 C
 - ☐ C. 4 C
 - ☒ D. 2 C

Q.97 A container holds a fixed mass of gas. The gas is compressed until its volume is reduced in the ratio 5 : 2. Compared to its initial value, the density of the gas becomes ____.

- Ans**
- ☐ A. 0.4p
 - ☐ B. 5p
 - ☒ C. 2.5p
 - ☐ D. 2p

Q.98 When a cylindrical wire made of a new alloy is stretched to double its original length, its resistance increases by a factor of four. If a second wire of the same alloy is shaped into a flat ribbon of identical length but half the original cross-sectional area, which property stays constant between the two wires?

- Ans**
- ☒ A. The specific resistance remains unchanged for both wires
 - ☐ B. The current-carrying capacity is identical for both wires
 - ☐ C. The resistance remains constant regardless of shape change
 - ☐ D. The voltage drop for a given current is the same in both wires

Q.99 A charged particle moves in a uniform magnetic field with constant speed. What is the work done by the magnetic force after one complete circular revolution?

- Ans**
- ☐ A. Positive
 - ☐ B. Equal to the kinetic energy
 - ☐ C. Negative
 - ☒ D. Zero

Q.100 Which effect would you observe if one branch in a parallel resistor circuit is disconnected?

- Ans**
- ☐ A. Current through other branches becomes zero
 - ☒ B. Current through other branches remains unchanged
 - ☐ C. Current through other branches increases
 - ☐ D. Current through other branches decreases



रेलवे भर्ती बोर्ड / RAILWAY RECRUITMENT BOARD
सीईएन ०२/२०२६ - तकनीशियन ग्रेड I सिगनल और तकनीशियन ग्रेड III
CEN 02/2026 - Technician Grade I Signal and Technician Grade III



Test Date	09/10/2026
Test Time	4:30 PM - 6:00 PM
Subject	RRB Technician Grade I Signal

*** 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 : General Awareness

Q.1 Which of the following is NOT a constitutional function of the Vice-President of India?

- Ans**
- ☒ A. Performing the functions of the President during the latter's absence
 - ☒ B. Acting as the President during a vacancy in that office
 - ☒ C. Presiding over joint sittings of Parliament
 - ☒ D. Serving as the ex officio Chairman of the Rajya Sabha

Q.2 Where was the 68th Session of the Asian Productivity Organization (APO) Governing Body held in May 2026?

- Ans**
- ☒ A. New Delhi
 - ☒ B. Kochi
 - ☒ C. Bhopal
 - ☒ D. Bengaluru

Q.3 Which of the following Indian states shares an international border with Pakistan?

- Ans**
- ☒ A. Gujarat
 - ☒ B. Bihar
 - ☒ C. Uttar Pradesh
 - ☒ D. Haryana

Q.4 Who is the author of the book 'Karuna: The Power of Compassion', published in 2026?

- Ans**
- ☒ A. Shashi Tharoor
 - ☒ B. Chetan Bhagat
 - ☒ C. Kailash Satyarthi
 - ☒ D. Amartya Sen

Q.5 Which incident prompted Mahatma Gandhi to suspend the Non-Cooperation Movement in 1922?

- Ans**
- ☒ A. Simon Commission's arrival
 - ☒ B. Bardoli Satyagraha
 - ☒ C. Chauri Chaura incident
 - ☒ D. Jallianwala Bagh massacre

- Q.6** Which of the following was the theme of the 20th Statistics Day observed by the Ministry of Statistics and Programme Implementation on 29 June 2026?
- Ans** ☐ A. Statistics for Nation Building
☐ B. Data for Sustainable Development
☐ C. Digital India Through Data
☒ D. Unlocking the Potential of Administrative Data
- Q.7** Which policy/mechanism enabled the Portuguese to control maritime trade in the Indian Ocean during the early 16th century?
- Ans** ☒ A. Cartaz System
☐ B. Doctrine of Lapse
☐ C. Forward Policy
☐ D. Subsidiary Alliance
- Q.8** Which British Act first made it compulsory to set aside a specific amount of funds for the development of education in India?
- Ans** ☐ A. Charter Act, 1853
☒ B. Charter Act, 1813
☐ C. Regulating Act, 1773
☐ D. Indian Councils Act, 1892
- Q.9** Which policy instrument most directly drives the structural expansion of Rural Non-Farm Employment (RNFE) in India?
- Ans** ☐ A. Provision of input subsidies to farmers
☒ B. Promotion of self-employment under NRLM
☐ C. Food security through Public Distribution System
☐ D. Stabilization of farm product prices via MSP
- Q.10** Which one of the following sets consists only of Sushir Vadya (wind instruments)?
- Ans** ☐ A. Manjira, Kartal, Jal Tarang
☐ B. Tabla, Pakhawaj, Dholak
☐ C. Veena, Sitar, Sarod
☒ D. Flute, Shehnai, Nadaswaram

Section : General Intelligence and Reasoning

- Q.11** Refer to the following letter, symbol series and answer the question. Counting to be done from left to right only.
 (Left) \$ C \$ @ M * Y @ * Z A £ & C \$ % © F M % % \$ (Right)
 How many such symbols are there each of which is immediately preceded by a letter and also immediately followed by a letter?
- Ans** ☐ A. 3
☐ B. 2
☒ C. 1
☐ D. 4
- Q.12** Each of P, Q, R, S, T, U and V play a game on different days of a week, starting from Monday and ending on Sunday of the same week. Q plays the game on Thursday. Only one person plays between Q and S, but S does not play on Saturday. Only V plays between T and R, but T does not play on the last day. Only two persons play between V and U. On which day does U play the game?
- Ans** ☐ A. Tuesday
☐ B. Monday
☒ C. Wednesday
☐ D. Friday

Q.13 Select the pair which follows the same pattern as that followed by the two set of pairs given below. Both pairs follow the same pattern.

BDK - FGM

RJL - VMN

- Ans**
- ☒ A. SWV - VRY
 - ☒ B. SWV - WYX
 - ☒ C. SVV - WYX
 - ☒ D. SVV - YXW

Q.14 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

VSU 28 TQS 36 ROQ 44 PMO 52 ?

- Ans**
- ☒ A. NKM 60
 - ☒ B. NKM 59
 - ☒ C. NJL 60
 - ☒ D. NJL 59

Q.15 Which of the following letter-clusters should replace # and % so that the pattern and relationship followed between the letter-cluster pair on the left side of :: is the same as that on the right side of :: ?

: TDO :: PZK : %

- Ans**
- ☒ A. # = NWH; % = WGR
 - ☒ B. # = MWH; % = WGO
 - ☒ C. # = MWH; % = WGR
 - ☒ D. # = MUH; % = WGR

Q.16 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: Among five rods, M, N, O, P and Q, each having a different length, which rod is the shortest?

Statements:

(I) P is longer than N but shorter than Q. O is shorter than only one rod.

(II) Q is not the shortest.

- Ans**
- ☒ A. Data in statement II alone is sufficient to answer the question while data in statement I is not.
 - ☒ B. Data in both statements I and II together (and not statement I alone or statement II alone) are sufficient to answer the question.
 - ☒ C. Data in both statements I and II together are NOT sufficient to answer the question.
 - ☒ D. Data in statement I alone is sufficient to answer the question while data in statement II is not.

Q.17 In a certain code language,
A @ B means 'A is the daughter of B',
A # B means 'A is the brother of B',
A \$ B means 'A is the wife of B',
A % B means 'A is the father of B'.

Based on the above, how is Cori related to Vishal if 'Cori @ Gagan % Yasha # Jagriti \$ Vishal'?

- Ans**
- ☒ A. Mother
 - ☒ B. Wife's mother
 - ☒ C. Sister
 - ☒ D. Wife's sister

Q.18 Raghav starts from Point A and drives 7 km towards west. He then takes a right turn, drives 4 km, turns right and drives 11 km. He then takes a right turn and drives 10 km. He takes a final right turn, drives 4 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° turns only unless specified.)

Ans ☒ A. 7 km to the south

☒ B. 6 km to the south

☒ C. 7 km to the north

☒ D. 6 km to the north

Q.19 If 'A' stands for '÷', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of question mark '?' in the following equation?
11 B 3 C 6 D 4 A 2 = ?

Ans ☒ A. 37

☒ B. 36

☒ C. 38

☒ D. 35

Q.20 In a certain code language, 'angle skill add' is coded as 'ep ba zl' and 'snake cow angle' is coded as 'ba eu cp'. How is 'angle' coded in the given language?

Ans ☒ A. ba

☒ B. zl

☒ C. ep

☒ D. eu

Q.21 32 is related to 129 following a certain logic. Following the same logic, 44 is related to 177. To which of the following is 82 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/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.)

Ans ☒ A. 334

☒ B. 342

☒ C. 327

☒ D. 329

Q.22 This question is based on the following words.

RUN NET SEE DEN

How many letters are there in the English alphabetical order between the first letter of the second word from the right and the second letter of the first word from the left?

Ans ☒ A. 6

☒ B. 1

☒ C. 4

☒ D. 2

Q.23 In a certain code,
'students attends online classes' is coded as 'ul pv um ji',
'learning classes improves skills' is coded as 'ly np pv ci' and
'online meeting communication learning' is coded as 'um bh gh np'.
(All the codes are two-letter codes only.)

What is the possible code for 'skills'?

- Ans**
- ☒ A. Either 'ci' or 'pv'
 - ☒ B. Either 'um' or 'ci'
 - ☒ C. Either 'ci' or 'ly'
 - ☒ D. Either 'pv' or 'np'

Q.24 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 one out is not based on the number of consonants/vowels or their position in the letter cluster.)

- Ans**
- ☒ A. KM – SU
 - ☒ B. BD – JL
 - ☒ C. HL – PT
 - ☒ D. AC – HI

Q.25 What should come in place of the question mark (?) in the given series?

277 232 191 154 121 92 ?

- Ans**
- ☒ A. 71
 - ☒ B. 63
 - ☒ C. 76
 - ☒ D. 67

Section : Basics of Computers and Application

Q.26 Which situation most clearly demonstrates the consequence of weak cyber security in a business?

- Ans**
- ☒ A. A retailer's customer credit card details are stolen in a data breach
 - ☒ B. Computers run slowly due to outdated equipment
 - ☒ C. Employees receive training in customer service
 - ☒ D. Staff turnover increases due to workplace stress

Q.27 A regional news agency plans to launch a digital reporting platform for field journalists using tablets and mobile phones. The agency needs an operating system that can seamlessly coordinate real-time voice dictation, offline data storage, and integration with custom geo-tagging software, while ensuring that periodic OS updates do not disrupt these specialized functions. Which strategy is most likely to ensure long-term reliability and functional stability for their field devices?

- Ans**
- ☒ A. Use standard consumer mobile OS with automatic updates enabled
 - ☒ B. Rely on a cloud-based OS interface accessed from browser apps
 - ☒ C. Deploy devices running a customizable open-source mobile OS with enterprise-level update controls
 - ☒ D. Select proprietary tablet OS optimized for gaming applications

Q.28 Lata wants to quickly copy all objects in her graphic editing tool using only keyboard shortcuts. Which Ctrl key combination should she try with the keys Tab, C, V, S, or F?

- Ans**
- ☒ A. Ctrl + F
 - ☒ B. Ctrl + Tab
 - ☒ C. Ctrl + V
 - ☒ D. Ctrl + C

- Q.29** A student wants search results free from personalized tracking and based on aggregated results from multiple sources. Which search engine best fits this description?
- Ans** ☒ A. DuckDuckGo
☐ B. Bing
☐ C. Yahoo
☐ D. Google
- Q.30** A small non-profit organization wants to generate customized mailing labels for donors using MS Word, but needs to ensure that each label pulls the correct address from an imported spreadsheet. Which step is essential to correctly link the spreadsheet data so that each label displays the right donor information?
- Ans** ☐ A. Opening the spreadsheet in Word before starting the label mail merge
☐ B. Copying and pasting each donor's address into the label template manually
☐ C. Printing a test page before inserting any donor information
☒ D. Inserting merge fields into the label template after connecting the spreadsheet data source
- Q.31** Which menu in MS PowerPoint allows you to insert a Word Table or an Excel Worksheet into a slide?
- Ans** ☐ A. Design
☐ B. Review
☐ C. View
☒ D. Insert
- Q.32** If you want to rename a file without changing its location using a graphical interface, what would you typically do?
- Ans** ☐ A. Delete the file and create a new one
☐ B. Open the file and click 'Save As'
☒ C. Right-click the file and select 'Rename'
☐ D. Drag the file to a new folder
- Q.33** Where can you access the option to add a header or footer to your PowerPoint slides?
- Ans** ☒ A. In the Insert tab
☐ B. In the Design tab
☐ C. In the Transitions tab
☐ D. In the Review tab
- Q.34** Which feature distinguishes e-commerce from traditional retail most directly?
- Ans** ☐ A. Use of paper-based customer service forms
☐ B. Manual management of inventory records
☐ C. Exclusive in-store product advertising
☒ D. Ability to conduct transactions over the internet
- Q.35** What is the result of double-clicking the boundary between two row numbers in MS Excel?
- Ans** ☒ A. The row height automatically adjusts to fit the tallest content
☐ B. The column width changes to fit the longest entry
☐ C. The selected rows are merged
☐ D. The selected row is deleted

Q.36 Which method ensures that sensitive files cannot be read by unauthorized users even if the files are copied?

- Ans
- ✓ A. Encryption
 - ✗ B. Antivirus software
 - ✗ C. Password protection
 - ✗ D. Firewall

Q.37 Which security practice is most effective for preventing unauthorized network access in a corporate environment?

- Ans
- ✗ A. Using only strong passwords for all accounts
 - ✗ B. Regularly updating all operating systems
 - ✓ C. Implementing multi-factor authentication for all users
 - ✗ D. Segmenting the network into isolated subnets

Q.38 While overseeing a team developing specialized software for tracking wildlife rehabilitation data, a project manager must select the most suitable type of application software for this purpose. Which approach best aligns with the project's needs, considering factors such as adaptability, data specificity, and integration with existing databases?

- Ans
- ✓ A. Commissioning a custom-built data management application designed for wildlife rehabilitation workflows
 - ✗ B. Using a generic office suite with templates for manual data entry
 - ✗ C. Relying on open-source media editing software for record storage
 - ✗ D. Adapting a standard accounting package to track animal records

Q.39 While editing a confidential report in a spreadsheet, Jayne wants to move a selected block of text from one sheet to another, then immediately undo the move and instead duplicate the same block in a third sheet. If she uses only keyboard shortcuts involving Ctrl, Tab and the letters C, V, S, X, Z and F (and no mouse or menu), in what sequence must she apply these shortcuts to complete this task correctly without data loss?

- Ans
- ✗ A. First Ctrl+V, then Ctrl+C, next Ctrl+Tab, and finally Ctrl+F followed by Ctrl+V
 - ✓ B. First Ctrl+X, then Ctrl+V, next Ctrl+Z, and finally Ctrl+C followed by Ctrl+V
 - ✗ C. First Ctrl+S, then Ctrl+X, next Ctrl+F, and finally Ctrl+Tab followed by Ctrl+V
 - ✗ D. First Ctrl+C, then Ctrl+V, next Ctrl+S, and finally Ctrl+X followed by Ctrl+V

Q.40 Which feature in MS PowerPoint allows you to display repeating information such as page numbers or date on all slides while maintaining a cohesive design?

- Ans
- ✓ A. Adding headers and footers to the slide master
 - ✗ B. Using separate title slides
 - ✗ C. Inserting text boxes on individual slides
 - ✗ D. Changing background images on each slide

Q.41 During a mail merge in MS Word, a team wants to send personalized invitations to event attendees, each including a custom seat number. Which step ensures the seat numbers appear correctly for every recipient?

- Ans
- ✗ A. Add the seat number manually for every recipient
 - ✗ B. Insert a static seat number in the main document
 - ✓ C. Insert the seat number field from the data source into the main document
 - ✗ D. Select the print option before merging the data

Q.42 A student wants to secure their laptop used in public spaces. Which action provides the most effective protection against physical theft?

- Ans
- ✓ A. Using a security cable lock attached to the laptop
 - ✗ B. Creating regular backups of important files
 - ✗ C. Installing updated antivirus software
 - ✗ D. Enabling guest accounts for visitors

Q.43 A team leader asks you to format a project summary in Word so that all numbered lists instantly change their indentation settings whenever you adjust the corresponding icon below the menu bar. Which sequence of actions most directly achieves this objective without affecting other paragraph styles or manually updating each list?

- Ans**
- ☐ A. First, select the numbered lists, then use the bold icon below the menu bar.
 - ☐ B. First, select the numbered lists, then use the paragraph alignment icon below the menu bar.
 - ☐ C. First, select the numbered lists, then use the decrease indent icon below the menu bar.
 - ☒ D. First, select the numbered lists, then use the increase indent icon below the menu bar.

Q.44 Which type of virus is most likely to spread through shared USB devices?

- Ans**
- ☐ A. Macro virus
 - ☒ B. Boot sector virus
 - ☐ C. Network worm
 - ☐ D. File-infecting virus

Q.45 In a spreadsheet for managing a complex scheduling system, a user sets up a custom sequence for project codes starting with Z9A, incrementing alphabetically in the third character while resetting to A after Z (e.g., Z9A, Z9B, ..., Z9Z, Z9AA, ...). After dragging the fill handle to extend this pattern, the resulting series unexpectedly jumps from Z9Z to Z10A instead of Z9AA. Which underlying setup error most likely caused this deviation in the series progression?

- Ans**
- ☐ A. The cell formatting for the series was set to Text instead of General, causing the fill handle to misinterpret the pattern.
 - ☐ B. The cell range selected for autofill was too short, leading Excel to repeat the last value rather than continue the series.
 - ☐ C. A custom list for the series was not configured in the spreadsheet settings, so Excel reverted to its default number increment rule.
 - ☒ D. The sequence generation treated the numeric part as incrementable instead of recognizing the intended alphanumeric pattern.

Section : Mathematics

Q.46 Two fair dice are rolled. What is the probability that the sum is a prime number?

- Ans**
- ☒ A. $\frac{5}{12}$
 - ☐ B. $\frac{1}{3}$
 - ☐ C. $\frac{7}{18}$
 - ☐ D. $\frac{1}{2}$

Q.47 In a survey of 3125 people, 863 like tea and 2561 like coffee. The minimum number of people who like both tea and coffee, given that each of the surveyed people like at least one drink between tea and coffee, is:

- Ans**
- ☒ A. 299
 - ☐ B. 308
 - ☐ C. 305
 - ☐ D. 294

Q.48 The 36th term of an arithmetic progression whose first and second terms are 35 and 50, respectively, is:

- Ans**
- ☐ A. 575
 - ☐ B. 545
 - ☒ C. 560
 - ☐ D. 525

Q.49 Find the greatest number that exactly divides 294, 210, and 378.

- Ans ☐ A. 28
☒ B. 42
☐ C. 21
☐ D. 63

Q.50 The midpoint of a line segment joining two points P(-14, 4) and Q(2, -4) is:

- Ans ☐ A. (-7, 0)
☐ B. (-6, -2)
☐ C. (-4, 1)
☒ D. (-6, 0)

Q.51 If the ratio of two numbers is 4 : 1, and their HCF is 47, then their LCM is:

- Ans ☐ A. 376
☐ B. 47
☐ C. 94
☒ D. 188

Q.52 If $\tan^2 x = 1 - a^2$, then the value of $\sec x + \tan^3 x \operatorname{cosec} x$ is:

- Ans ☐ A. $(1 - a^2)^{\frac{3}{2}}$
☐ B. $(1 + a^2)^{\frac{3}{2}}$
☐ C. $(2 + a^2)^{\frac{3}{2}}$
☒ D. $(2 - a^2)^{\frac{3}{2}}$

Q.53 If the sum of the roots of the equation $2x^4 - kx^3 + 4x^2 + 5x - 8 = 0$ is 1,

- Ans ☒ A. 6
☐ B. 5
☐ C. 3
☐ D. 4

Q.54 A line passes through the point (4,3) and intercepts the x-axis at 8. Find its y-intercept.

- Ans ☐ A. 3 units
☐ B. 1 unit
☒ C. 6 units
☐ D. 4 units

Q.55 The salaries (in ₹1,000) of 6 employees are 30, 35, 40, 50, 60, and 200. The range of this data is recorded. If the highest salary (₹200,000) is removed, what will be the difference between the new range and the original range?

- Ans ☐ A. 170 (in ₹1,000)
☒ B. 140 (in ₹1,000)
☐ C. 60 (in ₹1,000)
☐ D. 80 (in ₹1,000)

Q.56 The product of two consecutive positive natural numbers is 156. The greater of the two numbers is:

- Ans
- ☐ A. 27
 - ☒ B. 13
 - ☐ C. 23
 - ☐ D. 7

Q.57 Choose the true statement representing union distributing over intersection.

- Ans
- ☐ A. $A \cup (B \cap C) = (A \cap B) \cup (A \cap C)$
 - ☐ B. $\cap(u) = (\cap) \cap (\cap)$
 - ☒ C. $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$
 - ☐ D. $A \cap (B \cup C) = (A \cup B) \cap (A \cap C)$

Q.58 The area of a square field is 6561 m^2 . Its perimeter (in m) is:

- Ans
- ☐ A. 342
 - ☒ B. 324
 - ☐ C. 288
 - ☐ D. 306

Q.59 A set X has 5 elements; find the number of proper subsets of X.

- Ans
- ☐ A. 64
 - ☐ B. 25
 - ☐ C. 32
 - ☒ D. 31

Q.60 Ram and Shyam are two candidates seeking admission to a coaching institute. Assume that their selections are independent. The probability that Ram is selected is 0.8, and the probability that exactly one of them is selected is 0.7. Find the probability that Shyam is selected.

- Ans
- ☐ A. $\frac{2}{9}$
 - ☒ B. $\frac{1}{6}$
 - ☐ C. $\frac{4}{9}$
 - ☐ D. $\frac{3}{8}$

Q.61 A solid cone has a height of 24 cm and a base radius of 7 cm. It is cut by a plane parallel to the base at a point 16 cm from the vertex. After removing the smaller cone, the remaining frustum is obtained. Find the total surface area of the frustum.

- Ans
- ☐ A. $140\pi \text{ cm}^2$
 - ☒ B. $168\pi \text{ cm}^2$
 - ☐ C. 300 cm^2
 - ☐ D. 336 cm^2

Q.62 The weights of 5 ear-heads of sorghum are 100, 102, 118, 124, 126 grams. Find the standard deviation.
(Round off your answer to two decimal places.)

- Ans
- ☐ A. 11.22 grams
 - ☒ B. 10.95 grams
 - ☐ C. 12.25 grams
 - ☐ D. 14.15 grams

Q.63 The angle of elevation of the top of a tower at a point P on the ground is 30° . On walking 36 m towards the tower, the angle of elevation becomes 60° . The height of the tower is:

- Ans
- ☒ A. $6\sqrt{3}$ m
 - ☒ B. $36\sqrt{3}$ m
 - ☒ C. $12\sqrt{3}$ m
 - ☒ D. $18\sqrt{3}$ m

Q.64 The sides of two similar triangles are in the ratio 3 : 5. If the area of the smaller triangle is 108 cm^2 , then find the area of the larger triangle.

- Ans
- ☒ A. 260 cm^2
 - ☒ B. 300 cm^2
 - ☒ C. 230 cm^2
 - ☒ D. 320 cm^2

Q.65 If 3 arithmetic means are inserted between 8 and 24, then the second arithmetic mean is:

- Ans
- ☒ A. 18
 - ☒ B. 14
 - ☒ C. 16
 - ☒ D. 12

Section : Basic Science and Engineering

Q.66 A constant force acts on a particle during three successive equal displacements. The angles between the force and the displacement are 0° , 60° , and 180° , respectively. Which statement correctly describes the nature of the work done?

- Ans
- ☒ A. The work done is zero during the third displacement.
 - ☒ B. The work done is maximum during the second displacement.
 - ☒ C. The work done is positive during the first two displacements and negative during the third.
 - ☒ D. The work done is the same during all three displacements.

Q.67 A horizontal conducting rail carries a current from east to west in a uniform magnetic field directed vertically downward. If the rail is free to move, in which direction does the magnetic force act?

- Ans
- ☒ A. The rail will accelerate directly downward, parallel to the magnetic field.
 - ☒ B. The rail will accelerate directly upward, along the direction of the magnetic field.
 - ☒ C. The rail accelerates southward, perpendicular to both the current and the magnetic field.
 - ☒ D. The rail will accelerate directly westward, along the direction of the current flow.

Q.68 Ampere's circuital law relates the line integral of the magnetic field around a closed path to:

- Ans
- ☒ A. The electric field enclosed by the path.
 - ☒ B. The net current enclosed by the path.
 - ☒ C. The magnetic flux through the path.
 - ☒ D. The resistance enclosed by the path.

Q.69 A charged particle moves in a circular path in a uniform magnetic field. Which physical quantity remains constant throughout the motion?

- Ans
- ☒ A. Magnetic force
 - ☒ B. Direction of velocity
 - ☒ C. Momentum direction
 - ☒ D. Speed

Q.70 At which location on the line joining two equal positive (like) point charges is the net electric field intensity equal to zero?

- Ans
- ☐ A. At a point far from both charges
 - ☒ B. At the midpoint between the charges
 - ☐ C. At a point closer to the positive charge
 - ☐ D. At the location of either charge

Q.71 An electron moves perpendicular to a magnetic field of 0.5 T with a speed of 2×10^6 m/s. If the magnitude of the electronic charge is 1.6×10^{-19} C, what is the magnetic force acting on the electron?

- Ans
- ☐ A. 3.2×10^{-13} N
 - ☐ B. 6.4×10^{-13} N
 - ☒ C. 1.6×10^{-13} N
 - ☐ D. 8.0×10^{-14} N

Q.72 For two equal positive point charges, what is the direction of the individual electric field components created by each charge in the region between them?

- Ans
- ☐ A. Zero everywhere between them
 - ☒ B. Away from each charge
 - ☐ C. Toward each charge
 - ☐ D. Circling both charges

Q.73 What happens to the resistance of a photoresistor when the intensity of incident light increases?

- Ans
- ☒ A. The resistance decreases
 - ☐ B. The resistance increases
 - ☐ C. The resistance remains constant
 - ☐ D. The resistance becomes zero

Q.74 In a laboratory, a researcher rotates a non-circular conductive frame with variable angular speed through a spatially non-uniform magnetic field. Which outcome below most accurately describes how the induced electromotive force (emf) would behave during a complete rotation?

- Ans
- ☒ A. The emf will display irregular peaks and troughs reflecting both the changing angular speed and the field's spatial variation.
 - ☐ B. The emf will remain constant throughout the rotation, unaffected by the frame's speed or field changes.
 - ☐ C. The emf will drop to zero at regular intervals regardless of the frame's speed or the field's properties.
 - ☐ D. The emf will be sinusoidal with uniform amplitude and frequency throughout the rotation.

Q.75 A straight conductor carrying a current is placed along the positive x-axis. If a uniform magnetic field is applied in the direction of the positive z-axis, in which direction will the magnetic force act on the conductor?

- Ans
- ☒ A. Along the negative y-axis
 - ☐ B. Along the positive z-axis
 - ☐ C. Along the negative x-axis
 - ☐ D. Along the positive y-axis

Q.76 A center-tapped full-wave rectifier has a transformer secondary voltage of 200 V_{RMS} per half winding. Which of the following minimum diode Peak Inverse Voltage (PIV) ratings should be selected for reliable operation?

- Ans
- ☐ A. 400 V
 - ☐ B. 550 V
 - ☐ C. 200 V
 - ☒ D. 600 V

Q.77 Which property of a test system does NOT influence the intrinsic electric field vector created by a stationary source charge at a given observation point?

- Ans
- ☐ A. The algebraic sign of the stationary source charge
 - ☒ B. The magnitude of the charge carried by the test particle
 - ☐ C. The permittivity of the surrounding dielectric medium
 - ☐ D. The radial distance from the source charge location

Q.78 If the potential at a point due to a charge is 100 volts, what will be the potential at double the distance from the same charge?

- Ans
- ☒ A. 50 volts
 - ☐ B. 200 volts
 - ☐ C. 100 volts
 - ☐ D. 25 volts

Q.79 A 0–200 V voltmeter has a guaranteed accuracy of $\pm 1\%$ of full-scale reading. If the instrument indicates 50 V, the actual voltage being measured lies between:

- Ans
- ☐ A. 49.0 V and 51.0 V
 - ☐ B. 47.5 V and 52.5 V
 - ☒ C. 48.0 V and 52.0 V
 - ☐ D. 49.5 V and 50.5 V

Q.80 A spring is compressed and stores 50 J of elastic potential energy. It is attached to a block resting on a frictionless horizontal surface. After the spring is released, what is the maximum kinetic energy gained by the block?

- Ans
- ☐ A. 25 J
 - ☐ B. 100 J
 - ☐ C. 75 J
 - ☒ D. 50 J

Q.81 How does the peak inverse voltage requirement of a full-wave bridge rectifier compare to that of a center-tapped full-wave rectifier for a given transformer secondary voltage?

- Ans
- ☒ A. The bridge rectifier requires a lower PIV rating per diode
 - ☐ B. The bridge rectifier does not require any PIV rating
 - ☐ C. Both require the same PIV rating per diode
 - ☐ D. The bridge rectifier requires a higher PIV rating per diode

Q.82 A spring is compressed to one-third of its original compression. Compared with the energy stored initially (18 J), the new stored energy is _____.

- Ans
- ☐ A. 8 J
 - ☐ B. 6 J
 - ☒ C. 2 J
 - ☐ D. 4 J

Q.83 A student determines the density of a liquid and then compares it with the density of water to calculate its relative density. Which statement correctly distinguishes these two quantities?

- Ans
- ☐ A. Both density and relative density have the SI unit kg/m^3 .
 - ☐ B. Density is obtained by dividing the density of a substance by the density of water.
 - ☒ C. Density has units, whereas relative density is a dimensionless quantity.
 - ☐ D. Relative density is always numerically greater than density.

- Q.84** An engineer compares two voltmeters. If Voltmeter A has higher sensitivity than Voltmeter B, what is the most likely practical implication?
- Ans** ☒ A. Voltmeter A is more accurate in all measurements than Voltmeter B.
☒ B. Voltmeter A can detect smaller voltage changes than Voltmeter B.
☒ C. Voltmeter A is less affected by electrical noise than Voltmeter B.
☒ D. Voltmeter A can measure larger voltages than Voltmeter B.
- Q.85** A programmer writes a subroutine that calls another subroutine. To ensure that the 8085 microprocessor returns to the correct location after execution, which register plays the most important role?
- Ans** ☒ A. Stack Pointer
☒ B. Accumulator
☒ C. Register B
☒ D. Instruction Register
- Q.86** A person holds a suitcase while standing motionless at a bus stop for five minutes. Since the suitcase remains at the same position throughout, what is the work done by the person on the suitcase?
- Ans** ☒ A. Equal to the weight of the suitcase
☒ B. Negative
☒ C. Positive
☒ D. Zero
- Q.87** A point charge of $2\ \mu\text{C}$ is placed 0.5 m away from another point charge in air. What is the magnitude of the electric field intensity at this point?
- Ans** ☒ A. $7.2 \times 10^4\ \text{N/C}$
☒ B. $4.5 \times 10^4\ \text{N/C}$
☒ C. $3.6 \times 10^4\ \text{N/C}$
☒ D. $1.8 \times 10^4\ \text{N/C}$
- Q.88** An electric field of $100\ \text{N/C}$ points to the right. What is the electric force on a $+2\ \text{C}$ charge placed in this field?
- Ans** ☒ A. $200\ \text{N}$ to the right
☒ B. $100\ \text{N}$ to the right
☒ C. $100\ \text{N}$ to the left
☒ D. $200\ \text{N}$ to the left
- Q.89** In a uniform electric field, how does the potential difference between two points depend on the distance separating them?
- Ans** ☒ A. The potential difference remains constant regardless of distance
☒ B. The potential difference increases linearly with the distance
☒ C. The potential difference decreases as distance increases
☒ D. The potential difference changes non-linearly with distance
- Q.90** An astronaut carries a metal block from the Earth to the Moon. Which physical quantity of the block remains the same throughout the journey?
- Ans** ☒ A. Gravitational force acting on it
☒ B. Weight
☒ C. Atmospheric pressure acting on it
☒ D. Mass

Q.91 Which statement correctly describes the binary number system?

- Ans**
- ✓ A. It uses only two symbols 0 and 1
 - ✗ B. It uses ten symbols to represent values
 - ✗ C. It uses symbols other than 0 and 1
 - ✗ D. It is the same as the decimal system

Q.92 A coil has 100 turns. If the magnetic flux linked with each turn changes by 0.05 Wb in 1 s, the induced emf is:

- Ans**
- ✓ A. 5 V
 - ✗ B. 20 V
 - ✗ C. 10 V
 - ✗ D. 2.5 V

Q.93 The magnetic field inside a long solenoid is 4×10^{-3} T when it carries a current of 2 A. If the current is increased to 6 A, the magnetic field becomes:

- Ans**
- ✗ A. 8×10^{-3} T
 - ✗ B. 2.4×10^{-2} T
 - ✓ C. 1.2×10^{-2} T
 - ✗ D. 4×10^{-3} T

Q.94 Which of these changes would decrease the resistance of a metallic conductor?

- Ans**
- ✗ A. Decreasing the thickness of the conductor
 - ✗ B. Increasing the length of the conductor
 - ✓ C. Increasing the thickness of the conductor
 - ✗ D. Increasing the temperature of the conductor

Q.95 Two equal forces act on two particles moving with equal speeds. Force F_1 is directed along the velocity of Particle P, whereas force F_2 acts at 60° to the velocity of Particle Q. Which statement is correct?

- Ans**
- ✗ A. The power ratio is $\sqrt{3}:1$.
 - ✓ B. Particle P receives twice the instantaneous power of Particle Q.
 - ✗ C. Particle Q receives twice the instantaneous power of Particle P.
 - ✗ D. Both forces deliver the same power.

Q.96 Why does Ohm's Law fail for a filament bulb as it heats up?

- Ans**
- ✓ A. The resistance increases with temperature
 - ✗ B. The resistance stays constant
 - ✗ C. The bulb turns off at high voltage
 - ✗ D. The current always decreases

Q.97 A digital panel meter displays readings in decimal form. What is a key advantage of using BCD coding instead of pure binary?

- Ans**
- ✗ A. It provides built-in error correction for each digit.
 - ✗ B. It increases memory efficiency for large numbers.
 - ✗ C. It reduces the number of wires needed for each digit.
 - ✓ D. It avoids complex binary-to-decimal conversion logic for display circuits.

Q.98 What is the function of a fuse in a simple electric circuit?

- Ans**
- ✓ A. It breaks the circuit if the current is too high
 - ✗ B. It converts current into light
 - ✗ C. It increases the voltage in the circuit
 - ✗ D. It stores electrical energy for future use

Q.99 Which statement best describes the function of the MOV instruction in the 8051 microcontroller?

- Ans**
- ☐ A. It shifts bits in the accumulator register
 - ☐ B. It performs arithmetic operations between two registers
 - ☐ C. It enables external interrupts in the microcontroller
 - ☒ D. It transfers data from a source to a destination register or memory location

Q.100 Which parameter primarily determines the maximum possible drain current (I_{DSS}) in a JFET's transfer characteristic?

- Ans**
- ☒ A. The physical properties of the channel and $V_{GS}=0$ V
 - ☐ B. The magnitude of drain-source voltage above pinch-off
 - ☐ C. The threshold voltage of the device
 - ☐ D. The resistance between source and ground