



# रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



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

Test Date	30/12/2024
Test Time	12:45 PM - 2:15 PM
Subject	RRB Technicians Grade III

**\* Note**

Correct Answer will carry 1 mark per Question.

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

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

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

Section : RRB Technicians Grade III

**Q.1** If each vowel in the word DIALECT is changed to the letter following it in the English alphabetical order and each consonant is changed to the letter preceding it in the English alphabetical order and then the group of letters thus formed is arranged in English alphabetical order, then which of the following letters will be third from the right?

- Ans**
- ☒ 1. E
  - ☒ 2. M
  - ☒ 3. F
  - ☒ 4. J

**Q.2** নিচে একটি বিবৃতিকে অনুসরণ করে, I এবং II সংখ্যায়ুক্ত দুটি সম্ভাব্য কারণ দেওয়া হয়েছে। বিবৃতিটি মনোযোগ সহকারে পড়ুন এবং দুটির মধ্যে কোন কারণটি/কারণগুলি বিবৃতিতে প্রদত্ত ঘটনা/পর্যবেক্ষণ/তথ্যকে সম্যকরূপে ব্যাখ্যা করে তা নির্ধারণ করুন।

বিবৃতি - প্রাথমিকভাবে মানুষের দ্বারা উৎপন্ন গ্রিনহাউস গ্যাসের কারণে গত শতাব্দীতে পৃথিবী পৃষ্ঠের গড় তাপমাত্রার অস্বাভাবিক দ্রুত বৃদ্ধি বিশ্ব উষ্ণায়ন ঘটায়।

কারণ:

- I. জীবাশ্ম জ্বালানী জ্বালিয়ে বিদ্যুৎ এবং তাপ উৎপন্ন করার ফলে বিশ্বব্যাপী গ্রিনহাউস গ্যাস নির্গমনের অধিকাংশ ঘটনা ঘটে।
- II. অরণ্য ছেদন বিশ্বব্যাপী গ্রিনহাউস গ্যাস নির্গমনের জন্য দায়ী। এটি তাদের প্রায় 25% এর জন্য দায়ী।

- Ans**
- ☒ 1. শুধুমাত্র I সম্ভাব্য কারণ।
  - ☒ 2. I ও II উভয়ই সম্ভাব্য কারণ।
  - ☒ 3. শুধুমাত্র II সম্ভাব্য কারণ।
  - ☒ 4. I বা II কোনোটিই সম্ভাব্য কারণ নয়।

**Q.3** The average of 7 consecutive numbers is 33. The greatest of these numbers is:

- Ans**
- ☒ 1. 30
  - ☒ 2. 28
  - ☒ 3. 36
  - ☒ 4. 33

**Q.4** OLQN is related to URWT in a certain way based on the English alphabetical order. In the same way, LINK is related to ROTQ. To which of the following options is IFKH related, following the same logic?

- Ans**
- ☒ 1. OLQN
  - ☐ 2. LONQ
  - ☐ 3. LOQN
  - ☐ 4. OLNQ

**Q.5** Which of the following numbers is divisible by all the natural numbers from 1 to 10 (both inclusive)?

- Ans**
- ☐ 1. 1000
  - ☒ 2. 2520
  - ☐ 3. 504
  - ☐ 4. 608

**Q.6** A boy of weight 600 N climbs up a rope through a height of 10 m. He takes 20 s to accomplish this task. What is the power expended by him?

- Ans**
- ☒ 1. 300 W
  - ☐ 2. 200 W
  - ☐ 3. 100 W
  - ☐ 4. 150 W

**Q.7** In an electric circuit, the device that acts as a variable resistor is called \_\_\_\_\_.

- Ans**
- ☐ 1. galvanometer
  - ☐ 2. ammeter
  - ☐ 3. voltmeter
  - ☒ 4. rheostat

**Q.8** When sodium hydroxide reacts with water, which of the following products is/are formed?

- Ans**
- ☐ 1. Only  $\text{Na}^+(\text{aq})$  ions
  - ☐ 2. Both  $\text{Na}^+(\text{aq})$  and  $\text{Cl}_2$
  - ☐ 3. Only  $\text{OH}^-(\text{aq})$  ions
  - ☒ 4. Both  $\text{Na}^+(\text{aq})$  and  $\text{OH}^-(\text{aq})$  ions

**Q.9** The volume of a cube of side  $6xyz^2$  is:

- Ans**
- ☐ 1.  $26xyz^2$
  - ☐ 2.  $36xyz^2$
  - ☐ 3.  $216x^3y^3z^3$
  - ☒ 4.  $216x^3y^3z^6$

**Q.10** Which of the following quantities determine the rate of work performed by a machine?

- Ans**
- ☐ 1. Total force exerted
  - ☒ 2. Power
  - ☐ 3. Rate of change of velocity
  - ☐ 4. Total energy consumed

Q.11 Which of the following is NOT part of India's 12 forts nominated for UNESCO World Heritage under the title 'Maratha Military Landscapes of India' for 2024-25?

- Ans
- ☐ 1. Rajgad
  - ☐ 2. Raigad
  - ☒ 3. Karnala Fort
  - ☐ 4. Salher

Q.12 Find the simple interest on ₹5,000 as a sum borrowed at 4% per year rate of interest for 5 years.

- Ans
- ☐ 1. ₹800
  - ☐ 2. ₹1,200
  - ☐ 3. ₹1,300
  - ☒ 4. ₹1,000

Q.13 কারখানায় একটি পণ্য উৎপাদন করতে মনজিৎ‌র ₹2,000 খরচ হয়েছিল। কারখানা থেকে পণ্যটিকে শোরুম পর্যন্ত পরিবহনের জন্য তাকে উৎপাদন খরচের 10% ব্যয় করতে হয়েছিল। মনজিৎ শোরুম থেকে যে পণ্য বিক্রি করেছিলেন সেটি পণ্যটির উৎপাদন এবং পরিবহনের মোট খরচের চেয়ে 15% অধিক। মনজিৎ কত দামে পণ্যটি শোরুম থেকে বিক্রি করেছিলেন?

- Ans
- ☐ 1. ₹2,500
  - ☐ 2. ₹2,250
  - ☐ 3. ₹2,300
  - ☒ 4. ₹2,530

Q.14 In plants, after fertilisation the ovary develops into a \_\_\_\_\_.

- Ans
- ☐ 1. Seed
  - ☐ 2. Flower
  - ☐ 3. Seedling
  - ☒ 4. Fruit

Q.15 In which organelle of the plant cells does photosynthesis take place?

- Ans
- ☒ 1. Chloroplast
  - ☐ 2. Mitochondria
  - ☐ 3. Nucleus
  - ☐ 4. Ribosome

Q.16 A একটি কাজ 4 দিনে করতে পারে। B এটি 20 দিনে করতে পারে। C এর সহায়তায় তারা 2 দিনে কাজটি শেষ করে। C একা কাজটি \_\_\_\_\_ দিনে করতে পারবে।

- Ans
- ☐ 1. 6
  - ☐ 2. 7
  - ☒ 3. 5
  - ☐ 4. 4

Q.17 Which of the following is the melting point of ice?

- Ans
- ☒ 1. 273.15 K
  - ☐ 2. 373.15 K
  - ☐ 3. 200.15 K
  - ☐ 4. 300.15 K

Q.18 Which of the following is NOT a unicellular organism?

- Ans
- ☐ 1. Paramecium
  - ☐ 2. Bacteria
  - ☒ 3. Fungi
  - ☐ 4. Chlamydomonas

Q.19 Which of the following is obtained when dilute HCl is added to a beaker that contains copper oxide?

- Ans
- ☒ 1. The blue-green colour of copper (II) chloride
  - ☐ 2. The red colour of copper (II) chloride
  - ☐ 3. The blue-green colour of copper (III) chloride
  - ☐ 4. The colourless solution of copper (II) chloride

Q.20 একটি উদ্ভিদ কোশকে, ওই কোশের চেয়ে বেশি জলের ঘনত্ব বিশিষ্ট একটি মাধ্যমে স্থাপন করা হলে কী ঘটবে?

- Ans
- ☐ 1. এটি সম্ভবত শুকিয়ে যাবে
  - ☐ 2. এটি ফেটে যাবে
  - ☐ 3. এটিতে কোন পরিবর্তন দেখা যাবে না
  - ☒ 4. এটি সম্ভবত ফ্যীত হবে

Q.21 Select the INCORRECT statement related to tropism.

- Ans
- ☐ 1. Chemotropism – movement towards chemical
  - ☒ 2. Phototropism – movement towards water
  - ☐ 3. Hydrotropism – movement towards water
  - ☐ 4. Geotropism – in response to the pull of earth or gravity

Q.22 The speed of a train is 90 km/h. What is the distance covered by it in 10 minutes?

- Ans
- ☐ 1. 13 km
  - ☐ 2. 5 km
  - ☒ 3. 15 km
  - ☐ 4. 11 km

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

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

- Ans
- ☐ 1. ZG – HQ
  - ☐ 2. TA – BK
  - ☐ 3. BI – JS
  - ☒ 4. SW – FM

Q.24 which city succeeded in hosting India's first-ever night street race in August 2023?

- Ans
- ☒ 1. Chennai
  - ☐ 2. Kolkata
  - ☐ 3. Mumbai
  - ☐ 4. Bengaluru



**Q.25** Anil Pradhan, co-founder of NGO Young Tinker Foundation, working towards education in underserved areas, awarded with Rohini Nayyar Prize for Outstanding Contribution to Rural Development in 2024, belongs to which of the following states?

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

**Q.26** Which of the following statements is true for the appliances used in domestic circuits:

- Ans**
- ☐ 1. Heavy appliances like AC, Geyser are connected in parallel and light appliances like bulbs, tubelights are connected in series
  - ☐ 2. Heavy appliances like AC, Geyser are connected in series and light appliances like bulbs, tubelights are connected in parallel
  - ☒ 3. All the appliances are connected in parallel
  - ☐ 4. All the appliances are connected in series

**Q.27** The device used for measuring potential difference across the ends of a conductor is:

- Ans**
- ☐ 1. Galvanometer
  - ☒ 2. Voltmeter
  - ☐ 3. Battery
  - ☐ 4. Ammeter

**Q.28** A body undergoes a displacement of 2m on application of a constant force of 10N; the work done will be:

- Ans**
- ☐ 1. 0 J
  - ☐ 2. 2 J
  - ☐ 3. 10 J
  - ☒ 4. 20 J

**Q.29** The value of

$$\frac{3}{7} + \frac{2}{7} + \frac{1}{14} - 3 = ?$$

- Ans**
- ☐ 1.  $-\frac{27}{14}$
  - ☐ 2.  $\frac{13}{14}$
  - ☒ 3.  $-\frac{31}{14}$
  - ☐ 4.  $\frac{27}{14}$

**Q.30** The correct relation between charge(Q) following through a conductor, time(t) for which the charge follows and the current (I) following through the conductor is:

- Ans**
- ☐ 1.  $I = Q t^2$
  - ☐ 2.  $I = Q t$
  - ☐ 3.  $I = Q^2 t$
  - ☒ 4.  $I = \frac{Q}{t}$

**Q.31** Work has the same unit as that of \_\_\_\_\_.

- Ans**
- ☐ 1. force
  - ☒ 2. energy
  - ☐ 3. acceleration
  - ☐ 4. momentum

**Q.32** The curved surface area of a right circular cylinder is  $616 \text{ cm}^2$  and the area of its base is  $38.5 \text{ cm}^2$ . What is the volume (in  $\text{cm}^3$ ) of the cylinder? (Use  $\pi = \frac{22}{7}$ )

- Ans**
- ☒ 1. 1078
  - ☐ 2. 1155
  - ☐ 3. 1243
  - ☐ 4. 1408

**Q.33** All 37 people are standing in a row, facing north. Arihant is 14<sup>th</sup> from the right end while Chery is 21<sup>st</sup> from the left end. How many people are there between Arihant and Chery?

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

**Q.34** Which state governor's Additional Secretary authored the book "Maa-Mother" which was launched by Law and Justice Minister Arjun Ram Meghwal in November 2024?

- Ans**
- ☒ 1. Kerala
  - ☐ 2. Tamil Nadu
  - ☐ 3. Maharashtra
  - ☐ 4. Rajasthan

**Q.35** 94% of the population of a village is 22,560. The total population of the village is:

- Ans**
- ☒ 1. 24,000
  - ☐ 2. 25,640
  - ☐ 3. 24,936
  - ☐ 4. 32,256

**Q.36** If the radius of a sphere is reduced by 50%, then the new volume will become \_\_\_\_\_ the original volume.

- Ans**
- ☐ 1. 4 times
  - ☐ 2.  $\frac{1}{4}$  times
  - ☒ 3.  $\frac{1}{8}$  times
  - ☐ 4. 8 times

**Q.37** Which of the following statements is INCORRECT about the use of washing soda?

- Ans**
- ☐ 1. It is used for removing permanent hardness of water.
  - ☐ 2. Sodium carbonate can be used as a cleaning agent for domestic purposes.
  - ☒ 3. It is not used in the paper industry.
  - ☐ 4. It is used in the manufacture of sodium compounds such as borax.

**Q.38** Which of the following budgets announced the release of 109 high-yielding and climate-resilient varieties of 32 field and horticulture crops?

- Ans**
- ☐ 1. Union Budget 2022-23
  - ☒ 2. Union Budget 2024-25
  - ☐ 3. Union Budget 2021-22
  - ☐ 4. Union Budget 2023-24

**Q.39** If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+', and 'D' stands for '−', then the resultant of which of the following would be 80?

- Ans**
- ☐ 1. 18 D 5 A 42 B 6 C 17
  - ☐ 2. 18 A 5 B 42 C 6 D 17
  - ☐ 3. 18 C 5 A 42 D 6 B 17
  - ☒ 4. 18 B 5 C 42 A 6 D 17

**Q.40** If 'A' stands for '+', 'B' stands for '×', 'C' stands for '+' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$22 B 5 D 12 A 4 C 6 = ?$$

- Ans**
- ☐ 1. 112
  - ☐ 2. 111
  - ☐ 3. 114
  - ☒ 4. 113

**Q.41** In a certain code language, 'HANKY' is coded as '56428' and 'SNAKY' is coded as '48725'. What is the code for 'H' in the given code language?

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

**Q.42** Which of the following statements regarding ionic compounds is INCORRECT?

- Ans**
- ☐ 1. Ionic compounds have a high melting point.
  - ☒ 2. Ionic compounds in solid state conduct electricity.
  - ☐ 3. Ionic compounds are generally soluble in water.
  - ☐ 4. Ionic compounds are solids.

**Q.43** Mechanical energy of a body includes \_\_\_\_\_.

- Ans**
- ☐ 1. kinetic energy only
  - ☐ 2. heat energy only
  - ☒ 3. both potential energy and kinetic energy
  - ☐ 4. potential energy only

**Q.44** Which of the following elements is most likely to form a negative ion (anion)?

- Ans**
- ☐ 1. Calcium (Ca)
  - ☐ 2. Aluminium (Al)
  - ☒ 3. Chlorine (Cl)
  - ☐ 4. Sodium (Na)

**Q.45** A father's age is seven times that of his son's age. Three years from now, the age of the father will be five times that of his son's age. After how many years will their combined age be 62 years?

- Ans**
- ☐ 1. 6 years
  - ☐ 2. 3 years
  - ☒ 3. 7 years
  - ☐ 4. 5 years

**Q.46** Which of the following pairs is correct in terms of pH values?

- (a) Tooth decay in humans: pH of mouth  $> 5.5$
- (b) pH range of human body: 7.0 to 7.8
- (c) Acid rain: pH of rain water  $> 8$

- Ans**
- ☒ 1. Only (b) is correct.
  - ☐ 2. (a), (b) and (c) are correct.
  - ☐ 3. Only (c) is correct.
  - ☐ 4. Only (a) is correct.

**Q.47** Surendra buys mangoes at the rate of 3 kg for ₹21 and sells them at 5 kg for ₹50. To earn ₹102 as profit, he must sell:

- Ans**
- ☐ 1. 56 kg
  - ☒ 2. 34 kg
  - ☐ 3. 32 kg
  - ☐ 4. 26 kg

**Q.48** Which of the following diseases is/are a viral infection(s) transmitted through sexual contact?

- a. HIV
- b. Warts
- c. Gonorrhoea
- d. Syphilis

- Ans**
- ☐ 1. Only a
  - ☐ 2. Only c and d
  - ☒ 3. Only a and b
  - ☐ 4. Only c



**Q.49** If 'P' stands for '×', 'Q' stands for '+', 'R' stands for '-' and 'S' stands for '÷', then the resultant of which of the following would be 75?

- Ans**
- ☐ 1. 13 S 5 S 2 P 6 P 3 R 24 R (44 R 2)
  - ☐ 2. 13 P 5 S 2 P 6 Q 3 S 24 R (44 Q 2)
  - ☐ 3. 13 R 5 S 2 P 6 P 3 S 24 R (44 P 2)
  - ☒ 4. 13 P 5 R 2 P 6 P 3 S 24 S (44 Q 2)

**Q.50** Which of the following statements is/are correct regarding the liquid state of matter?

Statement I: Liquids have fixed volume but no fixed shape.

Statement II: The rate of diffusion of liquids is higher than that of solids.

- Ans**
- ☐ 1. Neither statement I nor II is correct.
  - ☐ 2. Only statement II is correct.
  - ☒ 3. Both statements I and II are correct.
  - ☐ 4. Only statement I is correct.

**Q.51** A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for ₹3,200. With the help of C, they completed the work in 3 days. How much is to be paid to B?

- Ans**
- ☐ 1. ₹800
  - ☒ 2. ₹1,200
  - ☐ 3. ₹1,400
  - ☐ 4. ₹600

**Q.52** In some multicellular organisms, the body breaks up into smaller pieces upon maturation and each piece grows into a new organism. What is this known as?

- Ans**
- ☐ 1. Sexual reproduction
  - ☐ 2. Gamete formation
  - ☒ 3. Fragmentation
  - ☐ 4. Budding

**Q.53** How does a plant move its leaves in response to touch?

- Ans**
- ☐ 1. By changing the amount of nucleic acid in them
  - ☐ 2. By changing the amount of protein in them
  - ☐ 3. By changing the amount of lipid in them
  - ☒ 4. By changing the amount of water in them

**Q.54** Which of the following statements is/are correct regarding the Raigad Fort?

- (1) It is part of the 12 forts nominated for UNESCO World Heritage under the title "Maratha Military Landscapes of India" for 2024-25.
- (2) It was the capital of the most illustrious Maratha sovereign, nurtured by Chhatrapati Shivaji Maharaj.
- (3) Raigad, surrounded by valleys shaped by the Kal and Gandhari rivers, stands as an isolated massif without connections to neighbouring hills.

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

**Q.55** If  $64 : x :: x : 169$ , and  $x > 0$ , find the value of  $x$ .

- Ans**
- ☒ 1. 104
  - ☐ 2. 108
  - ☐ 3. 112
  - ☐ 4. 96

**Q.56** Which of the following is a pair of co-prime numbers?

- Ans**
- ☐ 1. 455, 49
  - ☒ 2. 81, 16
  - ☐ 3. 363, 77
  - ☐ 4. 52, 24

**Q.57** In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace  $X$  and  $Y$  so that the pattern followed by the two numbers on the left side of  $::$  is the same as that on the right side of  $::$  ?

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

$X : 44 :: 72 : Y$

- Ans**
- ☐ 1.  $X = 74, Y = 48$
  - ☒ 2.  $X = 68, Y = 46$
  - ☐ 3.  $X = 66, Y = 32$
  - ☐ 4.  $X = 62, Y = 34$

**Q.58** The action of chlorine on dry  $\text{Ca(OH)}_2$  produces which of the following?

- Ans**
- ☐ 1. Hydrochloric acid
  - ☐ 2. Calcium chloride
  - ☒ 3. Bleaching powder
  - ☐ 4. Calcium oxide

**Q.59** Which of the following methods is NOT used for preventing iron from rusting?

- Ans**
- ☐ 1. Chrome plating
  - ☐ 2. Painting
  - ☐ 3. Galvanising
  - ☒ 4. Heating

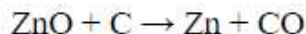
**Q.60** Which organisation conducted the study on background radiation levels in Kerala?

- Ans**
- ☒ 1. Bhabha Atomic Research Centre (BARC)
  - ☐ 2. Ministry of Environment
  - ☐ 3. Geological Survey of India (GSI)
  - ☐ 4. Indian Space Research Organisation (ISRO)

**Q.61** The force experienced by a current carrying conductor in a magnetic field is maximum when the angle between the direction of current and the direction of magnetic field is

- Ans**
- ☐ 1.  $60^\circ$
  - ☒ 2.  $90^\circ$
  - ☐ 3.  $0^\circ$
  - ☐ 4.  $45^\circ$

**Q.62** Identify the substance that gets reduced in the given equation:



- Ans**
- ☐ 1. CO
  - ☐ 2. Zn
  - ☒ 3. ZnO
  - ☐ 4. C

**Q.63** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

KNQ, LOR, MPS, NQT, ?

- Ans**
- ☒ 1. ORU
  - ☐ 2. ROU
  - ☐ 3. RUO
  - ☐ 4. OUR

**Q.64** The marked price of an article is ₹100. If the article is sold at a discount of 25%, then the selling price of the article is:

- Ans**
- ☐ 1. ₹80
  - ☐ 2. ₹70
  - ☒ 3. ₹75
  - ☐ 4. ₹125

**Q.65** Select the set in which the numbers are related in the same way as are the numbers of the following sets.

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

(105, 35, 7)

(135, 45, 9)

- Ans**
- ☒ 1. (150, 50, 10)
  - ☐ 2. (90, 25, 5)
  - ☐ 3. (115, 30, 6)
  - ☐ 4. (120, 40, 12)

**Q.66** Which of the following is least reactive?

- Ans**
- ☐ 1. Na
  - ☐ 2. K
  - ☐ 3. Ca
  - ☒ 4. Mg

**Q.67** A sum of money doubles itself at a certain rate of compound interest in 12 years when the interest is compounded annually. In how many more years will it become eight times of itself?

- Ans**
- ☒ 1. 24
  - ☐ 2. 48
  - ☐ 3. 12
  - ☐ 4. 36

**Q.68** Select the INCORRECT pair related to digestive glands and their enzymes.

- Ans**
- ☒ 1. Salivary gland – trypsin
  - ☐ 2. Liver – bile juice
  - ☐ 3. Gastric gland – pepsin
  - ☐ 4. Pancreas – pancreatic juice

**Q.69** Kishore Jena became first javelin thrower from which state to represent India at the finals of the World Athletics Championship?

- Ans**
- ☐ 1. West Bengal
  - ☒ 2. Odisha
  - ☐ 3. Rajasthan
  - ☐ 4. Karnataka

**Q.70** Which mirror has negative focal length?

- Ans**
- ☐ 1. Plane mirror
  - ☐ 2. Both convex and concave
  - ☒ 3. Concave
  - ☐ 4. Convex

**Q.71** In a certain code language, 'FOLD' is coded as '3579' and 'RAIL' is coded as '2456'. What is the code for 'L' in the given code language?

- Ans**
- ☐ 1. 6
  - ☐ 2. 4
  - ☐ 3. 7
  - ☒ 4. 5

**Q.72** প্রদত্ত ক্রমটি পড়ুন এবং নিম্নলিখিত প্রশ্নের উত্তর দিন (সমস্ত সংখ্যা শুধুমাত্র এক অঙ্কের সংখ্যা, এবং সমস্ত গণনা বামদিক থেকে ডানদিকে করতে হবে)।  
(বামদিক) 5 4 6 3 4 1 7 9 5 4 8 1 5 2 3 1 7 1 7 4 3 9 6 9 4 5 1 4 7 (ডানদিক)  
এইরূপ কতগুলি জোড় অঙ্ক আছে, যার প্রতিটির ঠিক পূর্বে একটি পূর্ণবর্গ এবং ঠিক পরবর্তীতে একটি বিজোড় অঙ্ক আছে? (দ্রষ্টব্য: 1 একটি পূর্ণবর্গ হিসাবে বিবেচিত হবে।)

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

**Q.73** What is the simple form of protein?

- Ans**
- ☐ 1. Glucose
  - ☐ 2. Glycerol
  - ☒ 3. Amino acid
  - ☐ 4. Fatty acid

**Q.74** Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

681, 607, 533, 459, 385, ?

- Ans**
- ☐ 1. 354
  - ☐ 2. 329
  - ☒ 3. 311
  - ☐ 4. 345

**Q.75** In November 2024, Centre for Development of Telematics (C-DOT) signed an agreement with which Indian Institute of Technology (IIT) for development of 'Millimeter Wave Transceiver for 5G Rural Connectivity', which aims to enable affordable broadband and mobile services across India?

- Ans**
- ☐ 1. IIT Madras
  - ☐ 2. IIT Delhi
  - ☒ 3. IIT Roorkee
  - ☐ 4. IIT Bombay

**Q.76** An amount is distributed among A, B and C in the ratio of 5 : 7 : 15. If A's share is ₹1,500, then the total amount is:

- Ans**
- ☐ 1. ₹5,400
  - ☐ 2. ₹2,700
  - ☒ 3. ₹8,100
  - ☐ 4. ₹4,200

**Q.77** If PQRS is a rhombus such that  $\angle PRQ = 40^\circ$ , then  $\angle PSQ$  is:

- Ans**
- ☐ 1.  $60^\circ$
  - ☒ 2.  $50^\circ$
  - ☐ 3.  $40^\circ$
  - ☐ 4.  $45^\circ$

**Q.78** Study the given table and answer the question that follows.

The table shows the demand of different shoe sizes as obtained in a survey.

Shoe size	Number of pairs demanded
5	44
6	48
7	58
8	46
9	39
10	37

Find the modal size of shoes demanded that one can obtain from the survey.

- Ans**
- ☐ 1. 9
  - ☐ 2. 5
  - ☐ 3. 6
  - ☒ 4. 7



**Q.79** যদি RHYMING শব্দের প্রতিটি ব্যঞ্জনবর্ণ ইংরেজি বর্ণানুক্রম অনুসারে তার ঠিক পরবর্তী বর্ণে পরিবর্তিত হয় এবং প্রতিটি স্বরবর্ণ ইংরেজি বর্ণানুক্রম অনুসারে তার ঠিক পূর্ববর্তী বর্ণে পরিবর্তিত হয়, তাহলে এইভাবে গঠিত নতুন বর্ণ-গুচ্ছে নিম্নের কোন বর্ণটি দুবার পুনরাবৃত্ত হবে?

- Ans**
- ☐ 1. O
  - ☒ 2. H
  - ☐ 3. I
  - ☐ 4. S

**Q.80** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

BEST - SBET - TSEB

ROLE - LROE - ELOR

- Ans**
- ☐ 1. RATE - ARTE - EATR
  - ☐ 2. WEST - WSET - TSEW
  - ☒ 3. DIVE - VDIE - EVID
  - ☐ 4. TANG - NTAG - ANGT

**Q.81** The sperms produced in the testes are transported via the \_\_\_\_\_.

- Ans**
- ☒ 1. vas deferens
  - ☐ 2. Urethra
  - ☐ 3. seminal vesicle
  - ☐ 4. urinary bladder

**Q.82** What is the reason for the formation of a bud in Hydra?

- Ans**
- ☒ 1. Repeated cell division at one specific site
  - ☐ 2. Overgrowth of the whole body
  - ☐ 3. Cell cycle
  - ☐ 4. Mutation

**Q.83** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EHL, GJN, ILP, KNR, ?

- Ans**
- ☒ 1. MPT
  - ☐ 2. PTM
  - ☐ 3. MTP
  - ☐ 4. PMT

**Q.84** Which of the following substances is NOT selectively reabsorbed as the urine flows along the tubules?

- Ans**
- ☐ 1. Glucose
  - ☐ 2. Amino acids
  - ☒ 3. Urea
  - ☐ 4. Salts

**Q.85** Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster does not belong to that group?

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

- Ans**
- ☐ 1. MQL
  - ☐ 2. EID
  - ☐ 3. OSN
  - ☒ 4. IMG

**Q.86** Study the given graph and answer the question that follows.

The line graph shows the number of plants planted by a student during the week.



What is the ratio of the number of plants planted on Friday to the number of plants planted on Saturday?

- Ans**
- ☐ 1. 1 : 9
  - ☐ 2. 7 : 9
  - ☐ 3. 2 : 5
  - ☒ 4. 6 : 5

**Q.87** Which of the following numbers is a perfect square?

- Ans**
- ☐ 1. 222
  - ☒ 2. 196
  - ☐ 3. 124
  - ☐ 4. 141

**Q.88** The value of  $\frac{50 + 50 \cot^2 A}{25 + 25 \tan^2 A}$  is:

- Ans**
- ☒ 1.  $2 \cot^2 A$
  - ☐ 2.  $\frac{1}{2} \cot^2 A$
  - ☐ 3.  $2 \tan^2 A$
  - ☐ 4.  $\frac{1}{2} \tan^2 A$

**Q.89** Two resistors of  $2\Omega$  each are connected in series to a battery of 4V. The current in Ampere flowing through the resistors will be:

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

**Q.90** A person spent ₹273 on buying a total of 50 packets of chips and biscuits. If the cost of each packet of chips is ₹6 and that of each biscuit packet is ₹5, then how many more biscuit packets than chips packets did he buy?

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

**Q.91** Charlie starts from point A and drives 5 km towards the South. He then takes two simultaneous right turns and drives 3 km and 2 km, respectively. He takes a final right turn and drives 3 km to reach point B. How far (shortest distance) and towards which direction should he drive to reach Point A again? (All turns are 90 degrees turns only, unless specified)

- Ans**
- ☐ 1. 2 km East
  - ☐ 2. 3 km South
  - ☐ 3. 2 km North
  - ☒ 4. 3 km North

**Q.92** D, E, F, G, L, M and N are sitting around a circular table facing the centre. Only two people sit between F and L when counted from the left of L. N sits third to the left of M. G sits to the immediate right of M. G sits second to the left of F. E is not an immediate neighbour of N. Who sits third to the right of D?

- Ans**
- ☒ 1. G
  - ☐ 2. N
  - ☐ 3. E
  - ☐ 4. F

**Q.93** The sum of squares of two positive numbers is 145. If the square root of one of the numbers is 3, then find the other number.

- Ans**
- ☐ 1. 9
  - ☐ 2. 136
  - ☒ 3. 8
  - ☐ 4. 64

**Q.94** \_\_\_\_\_ এর ফলে বিভিন্ন ধরনের স্থায়ী কলা উৎপন্ন হয়।

- Ans**
- ☐ 1. দীর্ঘায়ন (Elongation)
  - ☒ 2. পৃথকীকরণ (Differentiation)
  - ☐ 3. অঙ্গজ জনন (Vegetative Propagation)
  - ☐ 4. অঙ্কুরোদগম (Germination)

**Q.95** Which system has been inducted into the Indian Army's Corps of Army Air Defence to enhance defence capabilities and technology absorption?

- Ans**
- ☐ 1. Prithvi Command and Control System
  - ☐ 2. Agni Command System
  - ☐ 3. Varunastra Control Unit
  - ☒ 4. Akashteer Command and Control System

Q.96

In a certain code language,  
 'P + Q' means 'P is the daughter of Q',  
 'P - Q' means 'P is the wife of Q',  
 'P x Q' means 'P is the son of Q' and  
 'P ÷ Q' means 'P is the husband of Q'.

How is A related to E if 'A + B - C x D ÷ E'?

Ans

- ☐ 1. Sister
- ☐ 2. Daughter's daughter
- ☐ 3. Daughter
- ☒ 4. Son's daughter

Q.97

A, B, E, F, P, Q and R are sitting around a circular table facing the centre. A sits to the immediate left of E. Only three people sit between E and Q when counted from the right of E. Only one person sits between B and P when counted from the right of B. F sits to the immediate right of B. How many people sit between R and E when counted from the left of R?

Ans

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

Q.98

Calculate the molecular mass of ammonia,  $\text{NH}_3$ , using the provided atomic masses (Atomic mass of N = 14 u and H = 1 u).

Ans

- ☐ 1. 21 u
- ☐ 2. 10 u
- ☐ 3. 42 u
- ☒ 4. 17 u

Q.99

The centre of curvature of a concave mirror lies \_\_\_\_\_ the mirror, whereas it lies \_\_\_\_\_ the mirror for a convex mirror.

Ans

- ☐ 1. in front of; in front of
- ☐ 2. behind; behind
- ☐ 3. behind; in front of
- ☒ 4. in front of; behind

Q.100

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

Statements:

All planets are rocks.

All rocks are forests.

Conclusions:

(I) At least some rocks are planets.

(II) All planets are forests.

Ans

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

