



# रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



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

Test Date	27/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

**\* Note**

Correct Answer will carry 1 mark per Question.

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

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

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

### Section : RRB Technicians Grade III

**Q.1** When an action or a movement is to be performed, which tissue will do the final job in animals?

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

**Q.2** How long will it take for ₹1,500 to become ₹1,860 at 8% per annum simple interest?

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

**Q.3** Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

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

What is the sum of the 5<sup>th</sup> digit from the left and the 2<sup>nd</sup> digit from the right?

- Ans**
- ☐ 1. 8
  - ☒ 2. 6
  - ☐ 3. 3
  - ☐ 4. 7

**Q.4** While dissolving solute in a solution, when no more solute can be dissolved in a solution at a given temperature, it is called \_\_\_\_\_.

- Ans**
- ☐ 1. an unsaturated solution
  - ☐ 2. a suspension
  - ☐ 3. a colloidal solution
  - ☒ 4. a saturated solution

**Q.5** Select the set in which the numbers are related in the same way as are the numbers of the following sets.

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

(45, 96, 141)

(12, 16, 28)

- Ans**
- ☐ 1. (13, 15, 30)
  - ☒ 2. (16, 20, 36)
  - ☐ 3. (14, 17, 32)
  - ☐ 4. (10, 7, 18)

**Q.6** The value of  $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta + \cos \theta$  is \_\_\_\_\_.

- Ans**
- ☒ 1.  $2\cos\theta$
  - ☐ 2.  $-1$
  - ☐ 3.  $\sec^2 \theta$
  - ☐ 4.  $0$

**Q.7** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

LNI, MOJ, NPK, OQL, ?

- Ans**
- ☐ 1. RMP
  - ☐ 2. RPM
  - ☐ 3. PMR
  - ☒ 4. PRM

**Q.8** Refer to the given number and symbol series and answer the question that follows. Counting to be done from left to right only.

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

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

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

**Q.9** Who discovered free living cells in pond water for the first time?

- Ans**
- ☐ 1. Virchow in 1855
  - ☒ 2. Leeuwenhoek in 1674
  - ☐ 3. Robert Hooke in 1665
  - ☐ 4. Robert Brown in 1831

**Q.10** The PARAM Rudra supercomputer was inaugurated at which institute on 27 September 2024?

- Ans**
- ☐ 1. Tata Institute of Fundamental Research (TIFR), Mumbai
  - ☒ 2. S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata
  - ☐ 3. Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bengaluru
  - ☐ 4. Indian Institute of Science (IISc), Bengaluru

**Q.11** Who among the following received the 53<sup>rd</sup> Dadasaheb Phalke Award in 2023 for her lifetime achievement in Indian cinema?

- Ans**
- ☐ 1. Sridevi
  - ☐ 2. Hema Malini
  - ☒ 3. Waheeda Rehman
  - ☐ 4. Rekha

**Q.12** On 28 October 2024, in which city of Gujarat did Prime Minister Narendra Modi and Spanish PM Pedro Sanchez inaugurate the Tata Aircraft Complex, India's first private facility to build military planes?

- Ans**
- ☐ 1. Gandhi Nagar
  - ☐ 2. Kutch
  - ☐ 3. Ahmedabad
  - ☒ 4. Vadodara

**Q.13** Some seeds are dispersed when the fruits burst with sudden jerks and the seeds are scattered far from the parent plant. This happens in fruits of which of the following plants?

- Ans**
- ☐ 1. Sunflower and Madar
  - ☐ 2. Drumstick and Maple
  - ☐ 3. Xanthium and Urena
  - ☒ 4. Castor and Balsam

**Q.14** Calcium oxide reacts vigorously with water to produce slaked lime, releasing a large amount of heat. This reaction is an example of which of the following types of reaction?

- Ans**
- ☐ 1. Precipitation reaction
  - ☒ 2. Combination reaction
  - ☐ 3. Decomposition reaction
  - ☐ 4. Double decomposition reaction

**Q.15** Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

318, 300, 150, 132, 66, 48, ?

- Ans**
- ☐ 1. 16
  - ☐ 2. 32
  - ☒ 3. 24
  - ☐ 4. 58

**Q.16** What is the SI unit of mass and weight of a body, respectively?

- Ans**
- ☐ 1. kg, kg
  - ☐ 2. kg, s
  - ☐ 3. gm, N
  - ☒ 4. kg, N

**Q.17** A rectangular field 50 meters long and 42 meters broad contains a rectangular lawn inside it surrounded by a gravel path of uniform width. If the width of the path is 6 m, then the area of the path is

- Ans**
- ☐ 1.  $480 \text{ m}^2$
  - ☐ 2.  $720 \text{ m}^2$
  - ☐ 3.  $240 \text{ m}^2$
  - ☒ 4.  $960 \text{ m}^2$

**Q.18** Select the set in which the numbers are related in the same way as are the numbers of the following sets.

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

(12, 3, 9)

(28, 7, 21)

- Ans**
- ☐ 1. (48, 12, 26)
  - ☐ 2. (44, 12, 36)
  - ☒ 3. (48, 12, 36)
  - ☐ 4. (48, 14, 36)

**Q.19** Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All cups are plates.

All plates are glasses.

Conclusions:

(I) Some plates are not cups.

(II) All cups are glasses.

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

**Q.20** Which state won the 14<sup>th</sup> Hockey India Senior Men National Championship, 2024?

- Ans**
- ☐ 1. Karnataka
  - ☐ 2. Punjab
  - ☒ 3. Odisha
  - ☐ 4. Haryana

Q.21 which of the following is/ are correct related to Adrenalin hormone ?

(i) Heart beats faster

(ii) Breathing rate increases

(iii) Decreases blood pressure

Ans ☒ 1. Only (i) and (iii)

☒ 2. Only (ii) and (iii)

☒ 3. Only (i) and (ii)

☒ 4. (i), (ii) and (iii)

Q.22 What should be added to  $\frac{-5}{9}$  to get  $\frac{-5}{6}$  ?

Ans ☒ 1.  $\frac{-5}{18}$

☒ 2.  $\frac{-5}{9}$

☒ 3.  $\frac{-5}{12}$

☒ 4.  $\frac{-5}{6}$

Q.23 The speed of a car is 90 km/h in the first hour and 60 km/h in the second hour. What is the average speed of the car for the given two hours?

Ans ☒ 1. 72 km/h

☒ 2. 75 km/h

☒ 3. 80 km/h

☒ 4. 85 km/h

Q.24 If the magnitude of the force exerted by the earth on the moon is  $2.02 \times 10^{20} \text{ N}$ , then the magnitude of the force exerted by the moon on the earth is \_\_\_\_\_.

Ans ☒ 1.  $4.04 \times 10^{20} \text{ N}$

☒ 2.  $2.02 \times 10^{20} \text{ N}$

☒ 3.  $6.06 \times 10^{20} \text{ N}$

☒ 4.  $1.01 \times 10^{20} \text{ N}$

Q.25 If  $3^{(K-2)} \times 3^K = 729$ , then the value of K is:

Ans ☒ 1. 2

☒ 2. 4

☒ 3. 8

☒ 4. 6



**Q.26** Magnification produced by a lens is related to the object-distance  $u$ , and the image-distance  $v$ . This relationship is given by:

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

**Q.27** A shopkeeper provides successive discounts of 2% and 5%, which are equivalent to a single discount of \_\_\_\_.

- Ans**
- ☐ 1. 7%
  - ☐ 2. 7.1%
  - ☒ 3. 6.9%
  - ☐ 4. 6%

**Q.28** If  $a + \frac{1}{a} = 8$ , then  $a^2 + \frac{1}{a^2} = ?$

- Ans**
- ☐ 1. 64
  - ☐ 2. 68
  - ☐ 3. 66
  - ☒ 4. 62

**Q.29** Which of the following is the dispersed phase of automobile exhaust?

- Ans**
- ☐ 1. Gaseous phase
  - ☒ 2. Solid phase
  - ☐ 3. Plasma phase
  - ☐ 4. Liquid phase

**Q.30** In this question, a statement is followed by two courses of action, numbered I and II. You must assume everything in the statement to be true and on the basis of the information given in the statement, decide which of the courses of action logically follow(s) for pursuing.

Statement:

The river running through Town A is heavily polluted, affecting aquatic life and posing risks to public health due to industrial waste disposal and untreated sewage.

Courses of Action:

I. Invest in building advanced wastewater treatment plants to treat industrial effluents and sewage before releasing them into the river.

II. Launch a community-led initiative to organise regular river clean up drives involving volunteers from Town A.

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

**Q.31** Which of the following parts of a plant always grow downwards?

- Ans**
- ☒ 1. Roots
  - ☐ 2. Buds
  - ☐ 3. Leaves
  - ☐ 4. Branches

**Q.32** What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$9 - 2 \times 20 + 4 \div 11 = ?$$

- Ans**
- ☒ 1. 24
  - ☐ 2. 19
  - ☐ 3. 14
  - ☐ 4. 27

**Q.33** In a certain code language, 'email needs internet' is coded as 'ma bi cy' and 'radio needs waves' is coded as 'cy nu ph'. What is the code for 'needs' in the given code language?

- Ans**
- ☐ 1. ph
  - ☐ 2. bi
  - ☐ 3. nu
  - ☒ 4. cy

**Q.34** In which of the following matter are particles held together with maximum force?

- Ans**
- ☐ 1. Water
  - ☐ 2. Perfume
  - ☐ 3. Ink of pen
  - ☒ 4. Iron stick

**Q.35** The ratio of milk to water in 10 litres of a mixture is 3 : 2. The quantity of milk in the mixture will be:

- Ans**
- ☐ 1. 4 litres
  - ☒ 2. 6 litres
  - ☐ 3. 5 litres
  - ☐ 4. 10 litres

**Q.36** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JH-KI-LN

LJ-MK-NP

- Ans**
- ☐ 1. RP-SQ-TU
  - ☐ 2. QO-RP-ST
  - ☒ 3. OM-PN-QS
  - ☐ 4. SQ-TR-UV

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

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

- Ans**
- ☐ 1. JFB
  - ☐ 2. TPL
  - ☒ 3. FOZ
  - ☐ 4. CYU

**Q.38** If 6, 18, 39, and x are in proportion, then find the value of x.

- Ans**
- ☒ 1. 117
  - ☐ 2. 112
  - ☐ 3. 139
  - ☐ 4. 115

**Q.39** Amit starts from Point A and drives 35 km towards East. He then takes a right turn, drives 17 km, turns right and drives 15 km. He then takes a left turn and drives 13 km. He takes a final right turn, drives 20 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

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

- Ans**
- ☐ 1. 28 km towards South
  - ☐ 2. 30 km towards East
  - ☒ 3. 30 km towards North
  - ☐ 4. 28 km towards North

**Q.40** 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.41** If your nose is blocked, the olfactory receptors are NOT able to detect:

- Ans**
- ☐ 1. walking
  - ☐ 2. taste
  - ☒ 3. smell
  - ☐ 4. hearing

**Q.42** Which state of matter has the highest kinetic energy of particles?

- Ans**
- ☒ 1. Gas
  - ☐ 2. Plasma
  - ☐ 3. Liquid
  - ☐ 4. Solid

**Q.43** Which of the following is correctly matched?

- Ans**
- ☐ 1. Bisexual flower - Papaya
  - ☒ 2. Unisexual flower - Watermelon
  - ☐ 3. Bisexual flower - Watermelon
  - ☐ 4. Unisexual flower - Mustard



**Q.44** Which is/are present at the growing tips of stems and roots and increase(s) the length of the stem and the root?

**Ans** ☒ 1. Only intercalary meristem

☒ 2. Only apical meristem

☒ 3. Lateral meristem and intercalary meristem

☒ 4. Only lateral meristem

**Q.45** If a pair of linear equations is consistent, then the lines will be:

**Ans** ☒ 1. intersecting or coincident

☒ 2. always intersecting

☒ 3. always coincident

☒ 4. parallel

**Q.46** Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

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

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

**Ans** ☒ 1. 4

☒ 2. 2

☒ 3. 0

☒ 4. 1

**Q.47** The Mussalman Wakf (Repeal) Bill, 2024, was introduced in the Lok Sabha on \_\_\_\_.

**Ans** ☒ 1. 8 October 2024

☒ 2. 8 August 2024

☒ 3. 5 August 2024

☒ 4. 18 September 2024

**Q.48** In plants, some waste products are stored as resins and gums especially in the:

**Ans** ☒ 1. tissues with dead cells

☒ 2. cellular vacuoles

☒ 3. leaves

☒ 4. old xylem

**Q.49** A box full of chocolates weighs 12.650 kg. If the weight of the chocolates is 6 kg 350 g, the weight of the empty box is:

**Ans** ☒ 1. 2850 g

☒ 2. 2825 g

☒ 3. 6300 g

☒ 4. 6725 g

**Q.50** If multiple fission :: many cells, then binary fission :: \_\_\_\_\_.

- Ans**
- ☐ 1. four cells
  - ☒ 2. two cells
  - ☐ 3. three cells
  - ☐ 4. one cell

**Q.51** A cuboidal room is of length 15 m, breadth 17 m, and height 21 m. Find the cost of painting its walls and ceiling at the rate of ₹42/m<sup>2</sup>.

- Ans**
- ☐ 1. ₹68,918
  - ☐ 2. ₹65,128
  - ☐ 3. ₹64,258
  - ☒ 4. ₹67,158

**Q.52** The sum of two numbers is 35, and their LCM is 306. The two numbers are:

- Ans**
- ☒ 1. 17, 18
  - ☐ 2. 13, 22
  - ☐ 3. 16, 19
  - ☐ 4. 14, 21

**Q.53** A cistern is filled by Pipe A and Pipe B together in 2.4 hours. Pipe A alone can fill the cistern at the rate of 100 litres per hour. Pipe B alone can fill the cistern in 4 hours. What is the capacity of the cistern?

- Ans**
- ☐ 1. 500 litres
  - ☒ 2. 600 litres
  - ☐ 3. 1200 litres
  - ☐ 4. 1000 litres

**Q.54** A bus travel the first 60 m in 30 s and then another 80 m in 40 s. Calculate the average speed of the bus in m s<sup>-1</sup>.

- Ans**
- ☐ 1. 2.28 m s<sup>-1</sup>
  - ☐ 2. 1 m s<sup>-1</sup>
  - ☐ 3. 0.15 m s<sup>-1</sup>
  - ☒ 4. 2 m s<sup>-1</sup>

**Q.55** If  $A = 8^3 \times 5^4$  and  $B = 8^5 \times 5^3$ , then the value of  $A \times B$  is:

- Ans**
- ☒ 1.  $2^{24} \times 5^7$
  - ☐ 2.  $2^{16} \times 5^8$
  - ☐ 3.  $4^{15} \times 5^7$
  - ☐ 4.  $8^{15} \times 5^{12}$

**Q.56** In July 2024, which bank launched a new term deposit scheme 'Amrit Vrishti' with a tenure of 444 days?

- Ans**
- ☐ 1. HDFC
  - ☒ 2. SBI
  - ☐ 3. CITI Bank
  - ☐ 4. ICICI

**Q.57** Y has to score 40% marks to pass in an exam. He gets 20 marks and fails by 40 marks. The maximum marks of the exam is:

- Ans**
- ☐ 1. 250
  - ☐ 2. 100
  - ☒ 3. 150
  - ☐ 4. 200

**Q.58** If a regular polygon has 20 diagonals, then the sum of its interior angles is:

- Ans**
- ☒ 1.  $1080^\circ$
  - ☐ 2.  $960^\circ$
  - ☐ 3.  $1440^\circ$
  - ☐ 4.  $1200^\circ$

**Q.59** A student has an eye-power of  $-0.5D$ . What is the focal length and type of lens of spectacles that she should use for correcting this defect?

- Ans**
- ☐ 1.  $-2.5$  m, concave lens
  - ☐ 2.  $2.5$  m, convex lens
  - ☒ 3.  $-2.0$  m, concave lens
  - ☐ 4.  $2.0$  m, convex lens

**Q.60** What is the budget allocation for the Pradhan Mantri Vishwakarma Yojana (PM Vishwakarma Scheme) for the period from 2023-24 to 2027-28?

- Ans**
- ☐ 1. ₹16,000 crore
  - ☐ 2. ₹15,000 crore
  - ☒ 3. ₹13,000 crore
  - ☐ 4. ₹14,000 crore

**Q.61** Which of the following statements is true about a compound?

- Ans**
- ☐ 1. The constituents can be separated by physical process.
  - ☐ 2. It is a physical change.
  - ☒ 3. The new product formed has totally different properties.
  - ☐ 4. The new product formed has similar properties to the constituent substance.

**Q.62** David's salary was first decreased by 40% and subsequently increased by 50%. What percentage did he lose from his initial salary?

- Ans**
- ☐ 1. 14%
  - ☒ 2. 10%
  - ☐ 3. 15%
  - ☐ 4. 12%

**Q.63** Which of the following is the correct formula for pentane?

- Ans**
- ☒ 1.  $C_5H_{12}$
  - ☐ 2.  $C_5H_{10}$
  - ☐ 3.  $C_5H_{14}$
  - ☐ 4.  $C_5H_9$

**Q.64** A building contractor employs 25 male and 15 female workers. To a male worker he pays ₹20 per hour and to a female worker ₹20 per hour. The average wage per hour paid by the contractor is:

- Ans**
- ☐ 1. ₹22
  - ☐ 2. ₹23
  - ☒ 3. ₹20
  - ☐ 4. ₹21

**Q.65** In a certain code language, 'TEACH' is coded as '18239', 'MAKE' is coded as '4168' and 'CHECK' is coded as '83943'. What is the code for 'T' in the given code language?

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

**Q.66** In a certain code language,

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

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

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

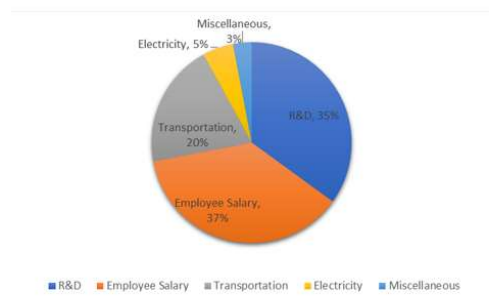
and 'A ÷ B' means 'A is the son of B'.

How is S related to W if 'R – S x T + U – V x W'?

- Ans**
- ☐ 1. Mother
  - ☐ 2. Sister
  - ☐ 3. Mother's mother
  - ☒ 4. Father's mother

**Q.67** Study the following pie-chart and answer the question that follows.

The following pie chart shows the breakup of the different costs incurred by Company X in the year 2020.



If the total cost incurred by the company X in 2020 is \$100,000, what is the electricity cost incurred by the company in 2020?

- Ans**
- ☐ 1. \$15,000
  - ☒ 2. \$5,000
  - ☐ 3. \$50,000
  - ☐ 4. \$35,000

**Q.68** If a ligament connects two bones, which of the following connects muscles to bones?

- Ans**
- ☐ 1. Cartilage
  - ☐ 2. Fibroblast
  - ☒ 3. Tendon
  - ☐ 4. Blood

**Q.69** Which of the following statements is NOT true about a solution?

- Ans**
- ☒ 1. Particles of the solution can be seen by the naked eye.
  - ☐ 2. The solute particles do not settle down when left undisturbed.
  - ☐ 3. A solution is a homogeneous mixture.
  - ☐ 4. The solute particles cannot be separated by filtration.

**Q.70** The pH of gastric juice is \_\_\_\_\_.

- Ans**
- ☐ 1. 7.4
  - ☐ 2. 2.2
  - ☒ 3. 1.2
  - ☐ 4. 10.0

**Q.71** In the electrolytic refining process of metals, electrolyte is made up of which of the following?

- Ans**
- ☐ 1. Combination of pure metal and metal salt
  - ☐ 2. Impure metal
  - ☒ 3. Metal salt
  - ☐ 4. Pure metal

**Q.72** John, Kelly, Lisa, Mike, Nancy, and Owen—are sitting in a straight line, facing north. Only one person sits to the left of Kelly. Exactly two people sit between Kelly and Lisa. Mike sits second to the right of Owen. Mike is not an immediate neighbor of Lisa. John sits to the immediate right of Lisa.

Who sits at the extreme left end of the line ?

- Ans**
- ☐ 1. Nancy
  - ☒ 2. Owen
  - ☐ 3. Mike
  - ☐ 4. John

**Q.73** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

JF-BE-HG

MI-EH-KJ

- Ans**
- ☒ 1. QM-IL-ON
  - ☐ 2. PM-IL-OJ
  - ☐ 3. QM-IK-ON
  - ☐ 4. PM-IL-OK



**Q.74** If an object takes 2 seconds to travel once around a circular path with radius ' $r$ ', its speed ' $v$ ' is given by \_\_\_\_\_.

**Ans**

- ☐ 1.  $\frac{\pi r}{2}$  metre/second
- ☒ 2.  $\pi r$  metre/second
- ☐ 3.  $2\pi r$  metre/second
- ☐ 4.  $\frac{\pi r}{4}$  metre/second

**Q.75** 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. VAF
- ☐ 2. AFK
- ☐ 3. TYD
- ☒ 4. PVZ

**Q.76** \_\_\_\_\_, on 9 September 2024, emphasised that safety and social audits of cities and institutions should be carried out to get a better idea about the lags and issues that currently exist in terms of ensuring women's safety in India.

**Ans**

- ☐ 1. The Prajnya Trust for Women (PTW)
- ☐ 2. The Self-Employed Women's Association (SEWA)
- ☐ 3. The All India Federation of Women Lawyers (AIFWL)
- ☒ 4. The National Human Rights Commission (NHRC)

**Q.77** Ozone shields the surface of the earth from ultraviolet (UV) radiation from the Sun and the amount of ozone in the atmosphere begins to drop sharply due to which of the following synthetic chemicals?

**Ans**

- ☐ 1. Carbon monoxide
- ☒ 2. Chlorofluorocarbons
- ☐ 3. Pesticides
- ☐ 4. Insecticides

**Q.78** In what direction is fluid pressure transmitted in any confined mass of fluid?

**Ans**

- ☐ 1. In two directions only.
- ☒ 2. Undiminished in all directions.
- ☐ 3. In one direction only.
- ☐ 4. In three directions only.

**Q.79** Ishan is younger than Surya by 3 years. If the ages of Ishan and Surya are in the ratio 7 : 8, then how old is Ishan?

**Ans**

- ☐ 1. 27 years
- ☒ 2. 21 years
- ☐ 3. 18 years
- ☐ 4. 24 years

**Q.80** A student in the lab observes the temperature of water on the Kelvin scale as 298K. What is the correct conversion of this temperature in the Celsius scale?

- Ans**
- ☐ 1. 32 degree Celsius
  - ☐ 2. 28 degree Celsius
  - ☒ 3. 25 degree Celsius
  - ☐ 4. 30 degree Celsius

**Q.81** In an aqueous solution, acid and base produce:

- Ans**
- ☐ 1.  $\text{Na}^+$  ions and  $\text{CO}_3^{2-}$  ions, respectively
  - ☒ 2.  $\text{H}^+$  ions and  $\text{OH}^-$  ions, respectively
  - ☐ 3.  $\text{Li}^+$  ions and  $\text{CO}_3^{2-}$  ions, respectively
  - ☐ 4.  $\text{K}^+$  ions and  $\text{CO}_3^{2-}$  ions, respectively

**Q.82** A current of 2 A is flowing through a conductor of resistance 12  $\Omega$ . Then the potential difference across the conductor is:

- Ans**
- ☐ 1. 12 V
  - ☒ 2. 24 V
  - ☐ 3. 6 V
  - ☐ 4. 35 V

**Q.83** If a 5 N force applied to an object displaces it by 3 m from its initial position, then what is the work done by the force?

- Ans**
- ☐ 1. 20 J
  - ☐ 2. 5/3 J
  - ☐ 3. 50 J
  - ☒ 4. 15 J

**Q.84** What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$24 + 4 - 15 \div 2 \times 12 = ?$$

- Ans**
- ☐ 1. 70
  - ☐ 2. 90
  - ☐ 3. 100
  - ☒ 4. 80

**Q.85** The \_\_\_\_\_ on 5 April 2024 launched India's first-ever book on Sports Psychology.

- Ans**
- ☒ 1. International Institute of Sports Management (IISM)
  - ☐ 2. National Institute of Sports Management (NISM)
  - ☐ 3. International School of Sports Management (ISSM)
  - ☐ 4. Tamil Nadu Physical Education and Sports University (TNPES)

**Q.86** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

QSU, PRT, OQS, NPR, ?

- Ans**
- ☐ 1. MQO
  - ☒ 2. MOQ
  - ☐ 3. OMQ
  - ☐ 4. OQM

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

Statements:

All wigs are plastics.

All stones are plastics.

Conclusion:

(I) All plastics are wigs.

(II) Some wigs are stones.

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

**Q.88** In what duration will a sum of ₹2,100 fetch a simple interest of ₹1,050 at 10% per annum rate of interest?

- Ans**
- ☐ 1. 10 years
  - ☐ 2. 6 years
  - ☒ 3. 5 years
  - ☐ 4. 8 years

**Q.89** If the manufacturer gains 10%, the wholesale dealer gains 15% and the retailer gains 25%, then the cost of production of a table, the retail price of which is ₹1,265, will be:

- Ans**
- ☐ 1. ₹632.50
  - ☐ 2. ₹834.34
  - ☒ 3. ₹800.00
  - ☐ 4. ₹814.00

**Q.90** Which of the following statement is NOT true for the magnetic field lines inside a current-carrying solenoid?

- Ans**
- ☐ 1. Along the axis and parallel to each other
  - ☒ 2. Ellipsoidal and intersects with each other
  - ☐ 3. Uniform inside the solenoid
  - ☐ 4. The same at all points inside the solenoid

**Q.91** All 37 people are standing in a row facing North. Arav is 14<sup>th</sup> from the right end while Varun is 21<sup>st</sup> from the left end. How many people are there between Arav and Varun?

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

**Q.92** The work done by a person pushing a brick parallel to the ground with a force of 2 N is 3 J. The displacement caused by the force is equal to \_\_\_\_\_.

- Ans**
- ☒ 1. 1.5 m
  - ☐ 2. 6 m
  - ☐ 3. 5 m
  - ☐ 4. 0.66 m

**Q.93** Which of the following compounds is NOT formed when ferrous sulphate is heated?

- Ans**
- ☐ 1. Ferric oxide
  - ☐ 2. Sulphur dioxide
  - ☐ 3. Sulphur trioxide
  - ☒ 4. Sulphuric acid

**Q.94** Consider an object moving along a straight line, it starts from point A, reaches point B, and then returns to point A. If the distance between A and B is 20 m, then the net displacement of the object is:

- Ans**
- ☐ 1. 10 m
  - ☒ 2. 0 m
  - ☐ 3. 40 m
  - ☐ 4. 20 m

**Q.95** Which of the following helps Paramoecium move food to the specific spot in the cell to obtain nutrition?

- Ans**
- ☐ 1. Flagella
  - ☐ 2. Pseudopodia
  - ☐ 3. Parapodia
  - ☒ 4. Cilia

**Q.96** A soft iron bar is introduced inside the current carrying solenoid. What is the magnetic field inside a current-carrying solenoid when a bar made of soft iron is introduced inside the solenoid?

- Ans**
- ☐ 1. Will become zero
  - ☒ 2. Will increase
  - ☐ 3. Will decrease
  - ☐ 4. Will remain same

**Q.97** Which city in Uttar Pradesh was awarded the first prize under the Medium-sized Cities category (Population between 3 lakh and 10 lakh) in the Swachh Vayu Survekshan 2024?

- Ans**
- ☐ 1. Varanasi
  - ☒ 2. Agra
  - ☐ 3. Firozabad
  - ☐ 4. Prayagraj

**Q.98** If the median of a data is 24.12 less than its mode, then the median of the data exceeds its mean by \_\_\_\_\_. (Use the empirical formula to find the answer)

- Ans**
- ☐ 1. 16.08
  - ☐ 2. 6.03
  - ☐ 3. 8.04
  - ☒ 4. 12.06

**Q.99** B, C, D, E, F, K and L are sitting around a circular table, facing the centre. L sits third to the left of K. Only two people sit between E and F when counted from the left of F. C sits to the immediate right of K. C sits second to the left of E. B is not an immediate neighbour of L. Who sits third to the right of B?

- Ans**
- ☐ 1. L
  - ☐ 2. F
  - ☒ 3. D
  - ☐ 4. K

**Q.100** Two pipes can fill a tank in 20 and 24 minutes, respectively, and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 minutes. The capacity of the tank is:

- Ans**
- ☐ 1. 60 gallons
  - ☐ 2. 180 gallons
  - ☐ 3. 100 gallons
  - ☒ 4. 120 gallons