



# रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS

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



Test Date	24/12/2024
Test Time	9:00 AM - 10:30 AM
Subject	RRB Technicians Grade III

\* Note

Correct Answer will carry 1 mark per Question.

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

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

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

### Section : RRB Technicians Grade III

**Q.1** Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

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

What is the sum of the 5<sup>th</sup> digit from the left and the 10<sup>th</sup> digit from the right?

- Ans**
- ☒ 1. 9
  - ☒ 2. 13
  - ☒ 3. 10
  - ☒ 4. 11

**Q.2** A fruit vendor bought 800 apples for ₹4,800. He spent ₹800 on transportation. For how much should he sell each apple to get a profit of ₹10 on each apple?

- Ans**
- ☒ 1. ₹32
  - ☒ 2. ₹76
  - ☒ 3. ₹12
  - ☒ 4. ₹17

**Q.3** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

EGK, HJN, KMQ, NPT, ?

- Ans**
- ☒ 1. SQW
  - ☒ 2. QWS
  - ☒ 3. QSW
  - ☒ 4. SWQ

**Q.4** A pair of parallel lines is intersected by a transversal such that  $\angle 1$  and  $\angle 2$  form a pair of interior angles on the same side of the transversal. If  $m\angle 1 = 65^\circ$ , what is the measure of  $\angle 2$ ?

- Ans**
- ☒ 1.  $95^\circ$
  - ☒ 2.  $65^\circ$
  - ☒ 3.  $115^\circ$
  - ☒ 4.  $145^\circ$

**Q.5** The motion of a freely falling body is an example of a:

- Ans**
- ☒ 1. uniformly accelerated motion
  - ☐ 2. non-uniformly accelerated motion
  - ☐ 3. uniform speed motion
  - ☐ 4. uniform velocity motion

**Q.6** Ramesh has invested ₹1,232 at 6% p.a. simple interest in a bank. What amount will he get after 3 years?

- Ans**
- ☐ 1. ₹1,448.76
  - ☒ 2. ₹1,453.76
  - ☐ 3. ₹1,485.80
  - ☐ 4. ₹1,416.80

**Q.7** The Defence Budget for the Financial Year 2024-25 constitutes what percentage of the total Union Budget?

- Ans**
- ☐ 1. 14.8%
  - ☐ 2. 11.2%
  - ☐ 3. 10.5%
  - ☒ 4. 12.90%

**Q.8** In a common salt/sodium chloride (NaCl), ions of which element is positively charged and negatively charged, respectively?

- Ans**
- ☒ 1. Na ions are positively charged, and Cl ions are negatively charged.
  - ☐ 2. Cl ions are positively charged, and Na ions are negatively charged.
  - ☐ 3. Ions of both Na and Cl are negatively charged.
  - ☐ 4. Ions of both Na and Cl are positively charged.

**Q.9** Which of the following statements is/are correct regarding the effects of changes in pressure on the states of matter?

Statement I: Applying pressure and reducing temperature can liquefy gases.

Statement II: Solid carbon dioxide is stored under high pressure.

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

**Q.10** 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. JN-IM
  - ☐ 2. RV-QU
  - ☒ 3. MQ-LO
  - ☐ 4. PT-OS

Q.11 What sum of money will amount to ₹1,116 at 4% per annum simple interest in 6 years?

- Ans
- ☐ 1. ₹800
  - ☒ 2. ₹900
  - ☐ 3. ₹700
  - ☐ 4. ₹1,000

Q.12 The sum of the first five prime numbers is:

- Ans
- ☐ 1. 18
  - ☐ 2. 11
  - ☒ 3. 28
  - ☐ 4. 26

Q.13 \_\_\_\_\_ broke the national record at the 2024 Portland Track Festival.

- Ans
- ☒ 1. Gulveer Singh
  - ☐ 2. Avinash Sable
  - ☐ 3. Muhammad Anas
  - ☐ 4. Jyoshna Sabar

Q.14 Which city of India was host of ITU's prestigious World Telecom Standardization Assembly (WTSA 2024)?

- Ans
- ☐ 1. Jaipur
  - ☐ 2. Kolkata
  - ☒ 3. New Delhi
  - ☐ 4. Chandigarh

Q.15 Unit of pressure is:

- Ans
- ☐ 1. Newton/meter
  - ☐ 2. Newton
  - ☐ 3. Angstrom
  - ☒ 4. Pascal

Q.16 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only, and all counting is to be done from left to right).

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

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

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

Q.17 If glucose :: six-carbon molecule, then pyruvate :: \_\_\_\_\_.

- Ans
- ☐ 1. four-carbon molecule
  - ☐ 2. five-carbon molecule
  - ☐ 3. two-carbon molecule
  - ☒ 4. three-carbon molecule

Q.18

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

Ans

✓ 1.  $2\cot^2 A$

✗ 2. 1

✗ 3.  $\sec^2 A$

✗ 4. 0

Q.19

An object of height 30 cm is placed in front of a concave lens and an image of height 10 cm is formed. The magnification of the lens is:

Ans

✓ 1.  $1/3$

✗ 2. -20

✗ 3. 3

✗ 4. 20

Q.20

Inside a bar magnet, the direction of magnetic field lines is from its:

Ans

✓ 1. South pole to its North pole

✗ 2. always perpendicular to the North pole

✗ 3. North pole to its South pole

✗ 4. always perpendicular to the South pole

Q.21

Study the following table and answer the question.

The table depicts the number of Apples sold by shops A and B to males and females on Monday

Shops	Number of apples sold to males	Number of apples sold to females
A	16	26
B	64	73

What is the difference between the number of apples sold by shops A and B to females?

Ans

✓ 1. 47

✗ 2. 50

✗ 3. 48

✗ 4. 45

Q.22

If the price of milk is 15% more than that of water, then the price of water is approximately what percentage less than that of milk?

Ans

✗ 1. 5%

✗ 2. 7.5%

✗ 3. 10.50%

✓ 4. 13.04%

**Q.23** The perimeter of a rhombus is 148 cm, and one of its diagonals is 24 cm. The area in  $\text{cm}^2$  of the rhombus is:

- Ans**
- ☐ 1. 875
  - ☒ 2. 840
  - ☐ 3. 770
  - ☐ 4. 700

**Q.24** The value of  $36^2 \div 9^2 + 4^2$  is:

- Ans**
- ☐ 1. 49
  - ☐ 2. 36
  - ☐ 3. 25
  - ☒ 4. 32

**Q.25** Match the following columns I and II.

Column I	Column II
A. Placenta	i. Nutrition
B. Fallopian tube	ii. Fertilization
C. Uterus	iii. Implantation

- Ans**
- ☐ 1. A-ii, B-i, C-iii
  - ☐ 2. A-iii, B-ii, C-i
  - ☐ 3. A-i, B-iii, C-ii
  - ☒ 4. A-i, B-ii, C-iii

**Q.26** Muscles present in our limbs move when we want them to and stop when we so decide. Such muscles are called:

- Ans**
- ☒ 1. voluntary muscles
  - ☐ 2. involuntary muscles
  - ☐ 3. cardiac muscles
  - ☐ 4. unstriated muscles

**Q.27** A shopkeeper offered successive discounts of 10% and 15% on an article with the marked price of ₹28,000. Find the selling price of the article.

- Ans**
- ☐ 1. ₹21,240
  - ☐ 2. ₹22,140
  - ☒ 3. ₹21,420
  - ☐ 4. ₹21,402



**Q.28** A, B, and C alone can do a piece of work in 9, 12 and 18 days, respectively. They all started the work together, but A left after 3 days. In how many days, was the total work completed?

**Ans**

- ☐ 1.  $\frac{5}{2}$
- ☒ 2.  $\frac{24}{5}$
- ☐ 3. 2
- ☐ 4.  $\frac{9}{5}$

**Q.29** If 'A' stands for '+', 'B' stands for '×', 'C' stands for '÷' and 'D' stands for '−', what will come in place of the question mark '?' in the following equation?

$$15 \text{ A } 3 \text{ B } 9 \text{ D } 2 \text{ C } 4 = ?$$

**Ans**

- ☒ 1. 6
- ☐ 2. 8
- ☐ 3. 2
- ☐ 4. 11

**Q.30** Which party formed the government in Odisha after the 2024 Assembly elections?

**Ans**

- ☐ 1. Janata Dal (United)
- ☒ 2. Bharatiya Janata Party
- ☐ 3. Aam Aadmi Party (AAP)
- ☐ 4. Indian National Congress

**Q.31** The present ages of the two people are 46 years and 60 years, respectively. If after 'k' years, the ratio of their ages is 4:5, then the value of 'k' is:

**Ans**

- ☐ 1. 12
- ☒ 2. 10
- ☐ 3. 11
- ☐ 4. 13

**Q.32** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

GL-IF-JM

JO-LI-MP

**Ans**

- ☐ 1. KP-MJ-NO
- ☐ 2. NS-PM-QR
- ☐ 3. LQ-NK-OP
- ☒ 4. MR-OL-PS

**Q.33** Who chairs the Defence Acquisition Council (DAC)?

**Ans**

- ☐ 1. President Droupadi Murmu
- ☐ 2. National Security Advisor Ajit Doval
- ☐ 3. Prime Minister Narendra Modi
- ☒ 4. Defence Minister Rajnath Singh

**Q.34** Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only four boxes are kept between A and Z. Only B is kept above A. Only two boxes are kept between L and Y. C is kept immediately above X. Y is not kept immediately above C.

Which box is kept fourth from the top?

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

**Q.35** A gas can be liquefied by \_\_\_\_\_.

- Ans**
- ☐ 1. low pressure and high temperature
  - ☐ 2. low pressure and low temperature
  - ☒ 3. high pressure and low temperature
  - ☐ 4. high pressure and high temperature

**Q.36** In August 2024, the Mukhyamantri Mahila Samman Yojana was launched by which of the following states?

- Ans**
- ☐ 1. Bihar
  - ☐ 2. Madhya Pradesh
  - ☒ 3. Jharkhand
  - ☐ 4. Odisha

**Q.37** The image formed by a concave mirror is real, inverted and with the same size as the object. The position of the object is kept:

- Ans**
- ☐ 1. far away from the centre of curvature
  - ☒ 2. at the centre of curvature
  - ☐ 3. between the focus and the centre of curvature
  - ☐ 4. at the focus

**Q.38** Given below is a statement followed by two possible reasons numbered I and II. Read the statement carefully and decide which of the two explains the event/observation/information given in the statement.

Statement - Despite having a highly skilled workforce, Company A has not been profitable for the past three years.

I. The company is located in a region where the cost of functioning is extremely high.

II. The CEO of Company A is a well-known philanthropist.

- Ans**
- ☒ 1. Only I is a possible reason
  - ☐ 2. Only II is a possible reason
  - ☐ 3. Neither I nor II is a possible reason
  - ☐ 4. Both I and II are possible reasons

**Q.39** Which of the following options is correct in the relation between mass and inertia?

- Ans**
- ☐ 1. The data provided here is not adequate to draw any conclusion.
  - ☐ 2. Inertia is inversely proportional to mass.
  - ☒ 3. Inertia is proportional to mass.
  - ☐ 4. Inertia is independent of mass.

**Q.40** Which of the following phenomena is the reason behind wearing cotton clothes in summer?

- Ans**
- ☐ 1. Sublimation
  - ☐ 2. Condensation
  - ☒ 3. Evaporation
  - ☐ 4. Fusion

**Q.41** B, C, D, E, F, K and L are sitting around a circular table, facing the centre. F sits second to the left of C. Only E sits between K and F. B sits third to the left of E. D is not an immediate neighbour of B. Who sits fourth to the right of L?

- Ans**
- ☒ 1. D
  - ☐ 2. C
  - ☐ 3. E
  - ☐ 4. F

**Q.42** Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

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

What is the sum of the 12<sup>th</sup> digit from the left and the 2<sup>nd</sup> digit from the right?

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

**Q.43** A sum of money is to be distributed among four members A, B, C, and D in the ratio 4 : 7 : 9 : 3. If C gets ₹720 more than D, find D's share.

- Ans**
- ☒ 1. ₹360
  - ☐ 2. ₹160
  - ☐ 3. ₹240
  - ☐ 4. ₹480

**Q.44** Which of the following is an example of an ionic compound?

- Ans**
- ☐ 1. Glucose
  - ☐ 2. Sugar
  - ☒ 3. Table salt
  - ☐ 4. Turmeric

**Q.45** Which of the following constant values given in the options is equal to the universal gravitational constant 'G'?

- Ans**
- ☐ 1.  $9.1 \times 10^{-31} kg$
  - ☐ 2.  $9.8 ms^{-2}$
  - ☒ 3.  $6.7 \times 10^{-11} Nm^2 kg^{-2}$
  - ☐ 4.  $1.6 \times 10^{-19} C$



**Q.46** Select the option that completes the given sentence correctly.

The pH scale is used to measure the level of \_\_\_\_\_ of a solution.

- Ans**
- ☐ 1. pollution
  - ☒ 2. acidity or basicity
  - ☐ 3. density
  - ☐ 4. volume

**Q.47** Formation of the mixture is a \_\_\_\_\_ change whereas formation of a compound is a \_\_\_\_\_ change, respectively.

- Ans**
- ☐ 1. physical, physical
  - ☒ 2. physical, chemical
  - ☐ 3. chemical, chemical
  - ☐ 4. chemical, physical

**Q.48** Two people drive towards each other from two places which are 56 km apart. The speed of the first person is 13 km/h and speed of the other is 14 km/h. After how long will they be 2 km apart if they start driving together?

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

**Q.49** The 15<sup>th</sup> edition of the annual art fair was held in \_\_\_\_\_, with over 100 exhibitors and an inaugural section on Design Initiatives.

- Ans**
- ☒ 1. New Delhi
  - ☐ 2. Chennai
  - ☐ 3. Surat
  - ☐ 4. Kolkata

**Q.50** In a certain code language,

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

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

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

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

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

- Ans**
- ☐ 1. Father
  - ☐ 2. Brother
  - ☒ 3. Son
  - ☐ 4. Son's son

**Q.51** In a certain code language, 'BEAR' is coded as '7912' and 'EARN' is coded as '1296'. What is the code for 'N' in the given code language?

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

**Q.52** Which of the following endocrine glands secretes growth hormone?

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

**Q.53** Seven people, A, B, C, L, X, Y and Z are sitting in a row, facing north. No one sits to the right of Y. Only three people sit between Y and C. Only two people sit between C and Z. B sits third to the left of X. L sits to the immediate right of X.

How many people sit between A and Z?

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

**Q.54** What will come in the place of '?' in the following equation, if '×' and '+' are interchanged and '-' and '+' are interchanged?

$$12 \times 12 \div 12 - 12 + 15 = ?$$

- Ans**
- ☐ 1. 69
  - ☐ 2. 99
  - ☒ 3. 9
  - ☐ 4. 39

**Q.55** A ball is dropped from the top of a tower. At the midpoint of the motion of the ball, the energy possessed by the ball is:

- Ans**
- ☐ 1. Kinetic
  - ☐ 2. Sound
  - ☐ 3. Potential
  - ☒ 4. Both Potential and Kinetic

**Q.56** Find the circumference of a circle that circumscribes a square of side 7 cm.

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

- Ans**
- ☐ 1. 44 cm
  - ☒ 2.  $22\sqrt{2}$  cm
  - ☐ 3. 22 cm
  - ☐ 4.  $44\sqrt{2}$  cm

**Q.57** The phenomenon of scattering of light by the colloidal particles gives rise to:

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

**Q.58** Uma swims in a 60 m long pool. She covers 120 m in one minute by swimming from one end to the other and back along the same straight path. The average velocity of Uma is:

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

**Q.59** Select the INCORRECT pair.

- Ans**
- ☐ 1. Plastic glass – non-biodegradable
  - ☒ 2. Kulhad – non-biodegradable
  - ☐ 3. Paper cup – biodegradable
  - ☐ 4. Vegetable – biodegradable

**Q.60** Pipe R can empty a full tank in 30 hours. But two pipes P and Q can fill the tank in 15 hours and 10 hours, respectively. Ram unknowingly opened all three taps. After 2 hours Shyam realised it and closed Pipe R. Due to this mistake how much time more would it take to fill the tank?

- Ans**
- ☐ 1. 1 hour 20 min
  - ☒ 2. 24 min
  - ☐ 3. 2 hours 15 min
  - ☐ 4. 18 min

**Q.61** The traffic lights at three different crossings turn red after every 30 sec, 45 sec and 60 sec, respectively. If they all turn red simultaneously at 8:30 a.m., then at what time will they again turn red simultaneously?

- Ans**
- ☐ 1. 8:34 a.m.
  - ☒ 2. 8:33 a.m.
  - ☐ 3. 8:35 a.m.
  - ☐ 4. 8:38 a.m.

**Q.62** The mean proportional of 25 and 36 is:

- Ans**
- ☐ 1. 36
  - ☐ 2. 60
  - ☐ 3. 25
  - ☒ 4. 30

**Q.63** What is the name of the phenomenon that causes white light to split into seven colours as it passes through a glass prism?

- Ans**
- ☐ 1. Diffraction
  - ☐ 2. Refraction
  - ☐ 3. Scattering
  - ☒ 4. Dispersion

**Q.64** In which of the following life processes is the creation of a DNA copy, a basic event?

- Ans**
- ☐ 1. Respiration
  - ☒ 2. Reproduction
  - ☐ 3. Circulation
  - ☐ 4. Excretion

**Q.65** Which of the following is the dispersed phase of butter?

- Ans**
- ☒ 1. Only liquid
  - ☐ 2. Only solid
  - ☐ 3. Both solid and liquid
  - ☐ 4. Only gas

**Q.66** Benji starts from Point A and drives 70 km towards South. He then takes a right turn, drives 20 km, turns right and drives 35 km. He then takes a left turn and drives 15 km. He takes a final right turn, drives 35 km and stops at Point P. How far (shortest distance) and towards which direction should he drive in order to reach Point A again?

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

- Ans**
- ☐ 1. 20 km towards East
  - ☐ 2. 30 km towards East
  - ☐ 3. 15 km towards East
  - ☒ 4. 35 km towards East

**Q.67** Evaluate the given expression.

$$\{15 \times 32 \div 2 \times 5\} \div 75$$

- Ans**
- ☐ 1. 14
  - ☐ 2. 18
  - ☐ 3. 12
  - ☒ 4. 16

**Q.68** In the following number-pairs, the second number is obtained by applying certain mathematical operations to the first number. Which numbers should replace X and Y so that the pattern followed by the two numbers on the left side of :: is the same as that on the right side of ::?

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

$$X : 38 :: 9 : Y$$

- Ans**
- ☒ 1. X = 14, Y = 28
  - ☐ 2. X = 14, Y = 30
  - ☐ 3. X = 15, Y = 48
  - ☐ 4. X = 15, Y = 28

**Q.69** In a certain code language, 'travel know places' is coded as 'mh ca lu' and 'travel makes tourist' is coded as 'by ai ca'. What is the code for 'travel' in the given code language?

- Ans**
- ☐ 1. by
  - ☐ 2. mh
  - ☐ 3. lu
  - ☒ 4. ca

**Q.70** Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

All legs are hands.

Some legs are ears.

Conclusions:

(I) Some hands are ears.

(II) Some ears are legs.

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

**Q.71** Plant cells have cell walls because \_\_\_\_\_.

- Ans**
- ☒ 1. they defend plant cells from a variety of external effects
  - ☐ 2. they do not have proper genetic material
  - ☐ 3. they do not have cytoplasm
  - ☐ 4. they are required for photosynthesis

**Q.72** Select the set in which the numbers are related in the same way as are the numbers of the following sets.

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

(2, 8, 32)

(5, 20, 80)

- Ans**
- ☐ 1. (9, 36, 124)
  - ☒ 2. (9, 36, 144)
  - ☐ 3. (9, 36, 142)
  - ☐ 4. (9, 39, 144)

**Q.73** 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. BEH
  - ☐ 2. RUX
  - ☐ 3. FIL
  - ☒ 4. CEG



**Q.74** In human beings, air is taken into the body through the nostrils and from here the air passes through the throat and into the lungs. Which of the following ensures that the air-passage does NOT collapse in the throat?

- Ans**
- ☒ 1. Rings of cartilage
  - ☐ 2. Nostrils large pores
  - ☐ 3. Nostrils large hairs
  - ☐ 4. Size of mouth cavity

**Q.75** Which of the following options should come in place of the question mark (?) in the given series?

7    20    59    176    ?    1580

- Ans**
- ☒ 1. 527
  - ☐ 2. 510
  - ☐ 3. 557
  - ☐ 4. 517

**Q.76** The average of the first 10 natural numbers is:

- Ans**
- ☐ 1. 5
  - ☐ 2. 6
  - ☒ 3. 5.5
  - ☐ 4. 6.5

**Q.77** In which of the following organisms can individuals change sex, indicating that sex is NOT genetically determined?

- Ans**
- ☐ 1. Lizards
  - ☒ 2. Snails
  - ☐ 3. Ostriches
  - ☐ 4. Frogs

**Q.78** Read the given statements and conclusions carefully. You have to take the given statements to be true even if they seem to be at variance from commonly known facts and decide which conclusion(s) logically follow(s) from the given statements.

Statements:

Some doors are locks.

No lock is a key.

Conclusions:

(I) No door is a key.

(II) Some locks are doors.

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

**Q.79** Which of the following is correct about fertilisation in plants?

**Ans** ☒ 1.

The male germ-cell produced by pollen grain fuses with the female gamete present in the ovule.

☐ 2.

The male germ-cell produced by pollen grain fuses with the female gamete present in the stigma.

☐ 3.

The male germ-cell produced by the ovary fuses with the female gamete present in the ovule.

☐ 4.

The male germ-cell produced by the ovule fuses with the female gamete present in the pollen tube.

**Q.80** Which of the following holds for the parallel combination of resistors?

**Ans** ☒ 1. The total resistance is always less than the smallest resistance.

☐ 2. The total resistance is equal to the highest resistance.

☐ 3. The total resistance is always greater than the smallest resistance.

☐ 4. The total resistance is equal to the smallest resistance.

**Q.81** If 30% of a number exceeds 20% of it by 12, then the number is:

**Ans** ☐ 1. 200

☒ 2. 120

☐ 3. 150

☐ 4. 180

**Q.82** Testes are located outside the abdominal cavity in scrotum because sperm formation requires:

**Ans** ☒ 1. lower temperature than the normal body temperature

☐ 2. higher temperature than the normal body temperature

☐ 3. normal body temperature

☐ 4. higher body temperature

**Q.83** Who is the second Indian chess player to breach the 2800 ELO rating barrier in classical chess as on December 2024?

**Ans** ☐ 1. Praggnanandhaa Rameshbabu

☐ 2. Gukesh D

☐ 3. Pentala Harikrishna

☒ 4. Arjun Erigaisi

**Q.84** When you look at the front side of a table spoon, an inverted image of yours is formed. The front side of table spoon works as a:

**Ans** ☒ 1. concave mirror

☐ 2. convex mirror

☐ 3. concave lens

☐ 4. plane mirror

**Q.85** Which of the following is a dominant trait in the experiments done by Mendel on garden pea?

- Ans**
- ☐ 1. Green seeds
  - ☐ 2. Wrinkled seeds
  - ☒ 3. Round seeds
  - ☐ 4. Short plants

**Q.86** What was the theme of The Climate Conference 2024 held on 12 January 2024 in Mumbai, Maharashtra?

- Ans**
- ☐ 1. "Empowering India's Climate Action"
  - ☒ 2. "Decoding the Green Transition for India"
  - ☐ 3. "Towards a Greener Future: India's Roadmap"
  - ☐ 4. "Innovating for Sustainable India"

**Q.87** The product  $(a + b)(a - b)(a^2 - ab + b^2)(a^2 + ab + b^2)$  is equal to :

- Ans**
- ☐ 1.  $a^3 - b^3$
  - ☐ 2.  $a^3 + b^3$
  - ☐ 3.  $a^6 + b^6$
  - ☒ 4.  $a^6 - b^6$

**Q.88** Select the INCORRECT pair related to digestive glands and their enzymes.

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

**Q.89** The chemical reaction that carries hydrogenation of vegetable oils in the presence of Ni catalyst is called:

- Ans**
- ☒ 1. addition reaction
  - ☐ 2. elimination reaction
  - ☐ 3. combustion reaction
  - ☐ 4. rearrangement reaction

**Q.90** Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CAN, FDP, IGR, LJT, ?

- Ans**
- ☒ 1. OMV
  - ☐ 2. LMV
  - ☐ 3. LNV
  - ☐ 4. LNR

**Q.91** The following observations are arranged in ascending order.

29, 32, 48, 50,  $x$ ,  $2x + 3$ , 72, 78, 84, 95

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

- Ans**
- ☐ 1. 63
  - ☐ 2. 62
  - ☐ 3. 51
  - ☒ 4. 41

**Q.92** The difference in the measures of two complementary angles is  $18^\circ$ . Find the measure of the smaller angle.

- Ans**
- ☒ 1.  $36^\circ$
  - ☐ 2.  $34^\circ$
  - ☐ 3.  $38^\circ$
  - ☐ 4.  $35^\circ$

**Q.93** The greatest natural number by which the product of three consecutive even natural numbers is always divisible is:

- Ans**
- ☐ 1. 16
  - ☒ 2. 48
  - ☐ 3. 24
  - ☐ 4. 96

**Q.94** Select the triad which follows the same pattern as that followed by the two triads given below. Both triads follow the same pattern.

ID-LG-OQ

LG-OJ-RT

- Ans**
- ☐ 1. MI-QL-TU
  - ☐ 2. MI-QK-TV
  - ☒ 3. NI-QL-TV
  - ☐ 4. NI-QK-TU

**Q.95** Which of the following is a unit of pressure?

- Ans**
- ☐ 1. Newton
  - ☐ 2. Cubic metre
  - ☒ 3. Pascal
  - ☐ 4. Kelvin

**Q.96** Which of the following is an example of reduction reaction?

- Ans**
- ☐ 1. Conversion of copper into copper oxide
  - ☒ 2. Conversion of copper oxide into copper
  - ☐ 3. Conversion of ethanol into acetic acid
  - ☐ 4. Conversion of carbon into carbon dioxide

**Q.97** Which of the following statements about the principal focus of a spherical mirror is/are correct?

- (a) It always lies midway between the pole and the centre of curvature.
- (b) Its position depends on the size of the mirror.
- (c) It always lies at the centre of curvature.

**Ans**

- ☒ 1. (b) and (c)
- ☒ 2. Only (a)
- ☒ 3. (a) and (b)
- ☒ 4. Only (c)

**Q.98** Which of the following parts of the plant is used in vegetative propagation?

**Ans**

- ☒ 1. Root and flowers
- ☒ 2. Fruits and leaves
- ☒ 3. Leaves and stem
- ☒ 4. Fruits and flowers

**Q.99** According to the reactivity series, which chemical reaction is possible?

**Ans**

- ☒ 1.  $\text{Zn} + \text{CuCl}_2 \rightarrow \text{ZnCl}_2 + \text{Cu}$
- ☒ 2.  $3\text{Cu} + \text{FeCl}_3 \rightarrow 3\text{CuCl}_2 + \text{Fe}$
- ☒ 3.  $\text{Cu} + \text{ZnCl}_2 \rightarrow \text{CuCl}_2 + \text{Zn}$
- ☒ 4.  $3\text{Ag} + \text{AlCl}_3 \rightarrow 3\text{AgCl} + \text{Al}$

**Q.100** In July 2024, the 46<sup>th</sup> session of the World Heritage Committee was held in which of the following locations?

**Ans**

- ☒ 1. New Delhi
- ☒ 2. Jaipur
- ☒ 3. Bengaluru
- ☒ 4. Indore