



रेल भर्ती बोर्ड / RAILWAY RECRUITMENT BOARDS



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

Test Date	26/12/2024
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 According to the Newton's third law of motion, to every action:

- Ans**
- ☒ 1. there is an unequal and opposite reaction and they act on the same body
 - ☒ 2. there is an equal and opposite reaction and they act on two different bodies
 - ☒ 3. there is an equal and opposite reaction and they act on the same body
 - ☒ 4. there is an equal and perpendicular reaction and they act on two different bodies

Q.2 Hari purchased 25 kg of wheat at the rate of ₹4 per kg and 35 kg of wheat at ₹4.50 per kg. He sold the mixture at the rate of ₹4.25 per kg. Find his gain or loss.

- Ans**
- ☒ 1. ₹3.50, profit
 - ☒ 2. ₹2.00, loss
 - ☒ 3. ₹2.50, loss
 - ☒ 4. ₹3.00, profit

Q.3 What is the strength of the magnetic field found inside a current carrying solenoid?

- Ans**
- ☒ 1. More at the ends than at the centre
 - ☒ 2. Minimum in the middle
 - ☒ 3. Found to increase from one end to the other
 - ☒ 4. Same at all points

Q.4

The correct expression of $8.\overline{46}$ in the fractional form is _____.

Ans

✓ 1. $\frac{838}{99}$

✗ 2. $\frac{83}{99}$

✗ 3. $\frac{846}{99}$

✗ 4. $\frac{84}{99}$

Q.5

Which city was identified as the most polluted in 2023 according to the Sixth Annual World Air Quality Report?

Ans

✗ 1. Mumbai

✓ 2. Begusarai

✗ 3. Delhi

✗ 4. Kolkata

Q.6

In a certain code language, 'happy children play' is coded as 'ha ch pl', and 'children love toys' is coded as 'ch lo tk'. What is the code for 'children' in the given code language?

Ans

✗ 1. Lo

✗ 2. ha

✗ 3. pl

✓ 4. ch

Q.7

Which of the following pairs has the same unit?

Ans

✗ 1. (i) Force and (ii) Inertia

✗ 2. (i) Energy and (ii) Inertia

✓ 3. (i) Work and (ii) Energy

✗ 4. (i) Force and (ii) Work

Q.8

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 onions are tomatoes.

Some tomatoes are potatoes.

Conclusions:

I. At least some tomatoes are onions.

II. Some onions are potatoes.

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.9 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 plates are glasses.

Some glasses are bowls.

Some bowls are cups.

Conclusions:

(I) Some cups are glasses.

(II) Some bowls are plates.

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

Q.10 Two numbers are in the ratio 4 : 1. If difference between the numbers is 54, then find the greater number.

- Ans**
- ☒ 1. 72
 - ☐ 2. 42
 - ☐ 3. 90
 - ☐ 4. 56

Q.11 CH_3OH , $\text{C}_2\text{H}_5\text{OH}$, $\text{C}_3\text{H}_7\text{OH}$ and $\text{C}_4\text{H}_9\text{OH}$ compounds exhibit almost similar chemical properties because they belong to:

- Ans**
- ☒ 1. a homologous series
 - ☐ 2. a heterologous series
 - ☐ 3. a periodic series
 - ☐ 4. an electrochemical series

Q.12 In which of the following months was the Project PARI (Public Art of India) initiated?

- Ans**
- ☐ 1. October 2024
 - ☐ 2. August 2024
 - ☐ 3. September 2024
 - ☒ 4. July 2024

Q.13 What will come in the place of '?' in the following equation, if '+' and '-' are interchanged and '×' and '÷' are interchanged?

$$16 - 2 + 5 \div 12 \times 2 = ?$$

- Ans**
- ☐ 1. 25
 - ☐ 2. 18
 - ☐ 3. 45
 - ☒ 4. 30

Q.14 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

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

What is the sum of the 15th digit from the left and the 11th digit from the right?

- Ans**
- ☐ 1. 12
 - ☐ 2. 7
 - ☐ 3. 11
 - ☒ 4. 10

Q.15 Which of the following plant hormones helps in promoting growth?

- Ans**
- ☐ 1. Auxin, Cytokinins and Absciscic acid
 - ☒ 2. Auxin, Cytokinins and Gibberellins
 - ☐ 3. Gibberellins, Cytokinins and Absciscic acid
 - ☐ 4. Auxin, Absciscic acid and Gibberellins

Q.16 In a certain code language, 'ARID' is coded as '9078' and 'DIRE' is coded as '8095'. What is the code for 'E' in the given code language?

- Ans**
- ☐ 1. 9
 - ☐ 2. 8
 - ☒ 3. 5
 - ☐ 4. 0

Q.17 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:

Air quality in City A has significantly deteriorated over the last decade due to increased industrial emissions.

Courses of Action:

- I. Authorities of City A should implement strict emission control regulations for industries in the city.
- II. The industries should distribute face masks to the residents of City A to protect them from the poor air quality.

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

Q.18 Which of the following statements is true for an ionic compound?

- Ans**
- ☒ 1. In an ionic compound, the transfer of electrons takes place from a metal to a non-metal.
 - ☐ 2. In an ionic compound, the transfer of electrons takes place from a non-metal to a metal.
 - ☐ 3. In an ionic compound, the transfer of electrons takes place from a metal to a metal.
 - ☐ 4. In an ionic compound, the transfer of electrons takes place from a non-metal to a non-metal.

Q.19 A resistor has current flowing through it. If its resistance is halved while the voltage across it is kept constant, what will be the change in current?

- Ans**
- ☐ 1. It will remain the same.
 - ☐ 2. It will be halved.
 - ☒ 3. It will be doubled.
 - ☐ 4. It will become zero.

Q.20 Which of the following options should come in place of the question mark (?) in the given series to make it logically complete?

329, 472, 615, 758, 901, ?

- Ans**
- ☐ 1. 1068
 - ☐ 2. 1082
 - ☒ 3. 1044
 - ☐ 4. 1025

Q.21 Pipe A, pipe B and pipe C together can fill a tank in 20 minutes, but because of the leak all three pipes take 10 minutes more time to fill the tank completely. Find the time in which leak can empty the full tank.

- Ans**
- ☐ 1. 40 min
 - ☒ 2. 60 min
 - ☐ 3. 30 min
 - ☐ 4. 45 min

Q.22 Which of the following pairs is an example of a solid state of matter?

- Ans**
- ☐ 1. Juice and milk
 - ☐ 2. Oil and sugar
 - ☐ 3. Water and oxygen
 - ☒ 4. Sugar and sponge

Q.23 Refer to the given series and answer the question that follows (all numbers are single-digit numbers only).

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

What is the sum of the 10th digit from the left and the 12th digit from the right?

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

Q.24 The difference between the ages of two siblings is 7 years. If the sum of their ages is 21 years, how old is the elder of the siblings?

- Ans**
- ☐ 1. 7 years
 - ☐ 2. 3 years
 - ☐ 3. 10 years
 - ☒ 4. 14 years

Q.25 How many prime numbers are there between 1 and 50?

- Ans
- ☐ 1. 13
 - ☐ 2. 14
 - ☐ 3. 16
 - ☒ 4. 15

Q.26 Which of the following is NOT a subatomic particle?

- Ans
- ☐ 1. Neutron
 - ☒ 2. Molecule
 - ☐ 3. Electron
 - ☐ 4. Proton

Q.27 Addition of 22 kg 589 g and 19 kg 678 g results in:

- Ans
- ☐ 1. 42 kg 367 g
 - ☐ 2. 41 kg 367 g
 - ☒ 3. 42 kg 267 g
 - ☐ 4. 41 kg 267 g

Q.28 Evaluate the given expression.

$$3 - (5 - 6 \div 3)$$

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

Q.29 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 Q related to S if 'Q x R - S + T ÷ U'?

- Ans
- ☐ 1. Sister
 - ☐ 2. Mother
 - ☒ 3. Husband's mother
 - ☐ 4. Daughter

Q.30 How long will it take for ₹1,500 to become ₹2,040 at 6% per annum simple interest?

- Ans**
- ✓ 1. 6 years
 - ✗ 2. $4\frac{1}{2}$ years
 - ✗ 3. 4 years
 - ✗ 4. $5\frac{3}{4}$ years

Q.31 Plaster of Paris is prepared when:

- Ans**
- ✗ 1. soda lime is heated at 373 K and it loses water molecules
 - ✓ 2. gypsum is heated at 373 K and it loses water molecules
 - ✗ 3. ammonia is heated at 373 K and it loses water molecules
 - ✗ 4. brine is heated at 373 K and it loses water molecules

Q.32 After fertilisation, which of the following is formed when the zygote divides several times within the ovule?

- Ans**
- ✗ 1. Stamen
 - ✗ 2. Pollen grain
 - ✓ 3. Embryo
 - ✗ 4. Pistil

Q.33 What is the unit of electro motive force (EMF)?

- Ans**
- ✓ 1. Volt
 - ✗ 2. Newton
 - ✗ 3. Ampere
 - ✗ 4. Sec

Q.34 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.)

(18, 6, 24)

(27, 9, 36)

- Ans**
- ✓ 1. (33, 11, 44)
 - ✗ 2. (33, 10, 44)
 - ✗ 3. (33, 11, 42)
 - ✗ 4. (31, 11, 44)

Q.35 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. NQ-LP
 - ✗ 2. FI-DG
 - ✗ 3. DG-BE
 - ✗ 4. IL-GJ

Q.36 In chemical industries, bleaching powder is used as:

- Ans**
- ☐ 1. a fire extinguisher
 - ☐ 2. a dehydrating agent
 - ☒ 3. an oxidising agent
 - ☐ 4. a reducing agent

Q.37 A student has to secure 40% marks to pass. He gets 178 marks and fails by 22 marks. The maximum marks is:

- Ans**
- ☐ 1. 800
 - ☒ 2. 500
 - ☐ 3. 200
 - ☐ 4. 1000

Q.38 If $4 \times 4^{(n+5)} = 256$, then the value of $5^{(n+4)}$ is:

- Ans**
- ☐ 1. 125
 - ☒ 2. 25
 - ☐ 3. 5
 - ☐ 4. 1

Q.39 The value of $\sin^2 \theta + \cos^2 \theta - (\sec^2 \theta - \tan^2 \theta) + \cot \theta \sin \theta - \cos \theta$ is _____. (θ lies in first quadrant)

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

Q.40 A trader marks his goods 25% above the cost price and allows a discount of 10% on them. His gain percentage is:

- Ans**
- ☒ 1. 12.5%
 - ☐ 2. 10%
 - ☐ 3. 15%
 - ☐ 4. 20%

Q.41 Find the simple interest on ₹700 at 9% per month in 7 months.

- Ans**
- ☐ 1. ₹444
 - ☐ 2. ₹461
 - ☒ 3. ₹441
 - ☐ 4. ₹464

Q.42 Which of the following is a reflex action?

- Ans**
- ☐ 1. Walking on the street
 - ☒ 2. Pulling hand from the flame
 - ☐ 3. Talking to a child
 - ☐ 4. Dancing on the stage

Q.43 Study the following table and answer the question.

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

Shops	Number of oranges sold to males	Number of oranges sold to females
A	21	26
B	39	37

What is the difference between the number of oranges sold by shops A and B to males?

- Ans**
- ☐ 1. 2
 - ☒ 2. 18
 - ☐ 3. 11
 - ☐ 4. 15

Q.44 MILH is related to KGJF in a certain way based on the English alphabetical order. In the same way, QMPL is related to OKNJ. To which of the following options is TPSO related, following the same logic?

- Ans**
- ☐ 1. RNMQ
 - ☒ 2. RNQM
 - ☐ 3. NRMQ
 - ☐ 4. NRQM

Q.45 Which of the following phenomena is used to liquefy gas?

- Ans**
- ☐ 1. Applying temperature and reducing pressure
 - ☒ 2. Applying pressure and reducing temperature
 - ☐ 3. Reducing pressure and reducing temperature
 - ☐ 4. Applying pressure and increasing temperature

Q.46 Which of the following is/are related to the practical applications of electricity in daily life?

- (A) Electric oven.
- (B) Electric laundry iron.
- (C) Solar water heater

- Ans**
- ☐ 1. (A), (B) and (C)
 - ☒ 2. Only (A) and (B)
 - ☐ 3. Only (B) and (C)
 - ☐ 4. Only (A) and (C)

Q.47 When Planaria is cut into many pieces each piece grows into a complete organism. What is this known as?

- Ans**
- ☐ 1. Multiple fission
 - ☐ 2. Fragmentation
 - ☒ 3. Regeneration
 - ☐ 4. Binary fission

Q.48 As per the 10th consecutive Monetary Policy Committee (MPC) meeting, what is the repo rate at which the Reserve Bank of India lends to banks as on 30th October 2024?

- Ans**
- ☐ 1. 7.5%
 - ☐ 2. 7.0%
 - ☐ 3. 6.0%
 - ☒ 4. 6.5%

Q.49 The SI unit of force is:

- Ans**
- ☐ 1. rad/s
 - ☐ 2. Dyne
 - ☒ 3. Newton
 - ☐ 4. m/s

Q.50 Three pipes A, B and C are opened to fill a tank such that B and C can fill the tank alone for 18 hours and 12 hours, respectively, while pipe A can empty a fully filled tank in 15 hours. All the three pipes are opened together, and after 5 hours pipe A is closed. In how many hours will the remaining tank be filled?

- Ans**
- ☐ 1. 1 hour 15 minutes
 - ☐ 2. 1 hour 45 minutes
 - ☒ 3. 4 hours 36 minutes
 - ☐ 4. 2 hours 50 minutes

Q.51 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

CFI, KNQ, SVY, ADG, ?

- Ans**
- ☐ 1. IKM
 - ☒ 2. ILO
 - ☐ 3. JLN
 - ☐ 4. JMP

Q.52 Which of the following Indian Navy personnel received the Shaurya Chakra 2024?

- Ans**
- ☐ 1. Lt. Cdr. Anil Kumar
 - ☐ 2. Commodore Ajay Mehta
 - ☐ 3. Vice Admiral KK Singh
 - ☒ 4. Capt. Sharad Sinsunwal

Q.53 P, Q, R, S, T, U, and V are sitting around a circular table facing the centre. Only 1 person sits between V and T when counted from the right of V. Q and R are both immediate neighbours of U. S is not an immediate neighbour of T. Only 1 person sits between P and R when counted from the left of R. Who sits third to the left of U?

- Ans**
- ☐ 1. T
 - ☒ 2. P
 - ☐ 3. S
 - ☐ 4. V

Q.54 Which of the following is/are correct with regard to the technique of plants to get rid of waste material?

- A. Plants get rid of excess water by transpiration.
- B. Waste products may be stored in leaves that fall off.
- C. Waste products are stored as resins and gums, especially in old xylem.

Ans

- ☒ 1. Both B and C
- ☒ 2. Both A and B
- ☒ 3. Both A and C
- ☒ 4. A, B and C

Q.55 If 7, 11, 21 and k are in proportion, the value of k is:

Ans

- ☒ 1. 45
- ☒ 2. 42
- ☒ 3. 33
- ☒ 4. 28

Q.56 During a chemical reaction, 10 grams of substance A reacts with 15 grams of substance B to produce a new compound. According to the law of conservation of mass, what will be the total mass of the products?

Ans

- ☒ 1. 25 g
- ☒ 2. 10 g
- ☒ 3. 11 g
- ☒ 4. 16 g

Q.57 Which of the following is true about nuclear membranes and other cell organelles in cells?

Ans

- ☒ 1. All cytoplasmic organelles are present in prokaryotic cells.
- ☒ 2. The nuclear membrane is absent in prokaryotic cells.
- ☒ 3. The nuclear membrane is absent in eukaryotic cells.
- ☒ 4. The nuclear membrane is present in prokaryotic cells.

Q.58 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. GDAX
- ☒ 2. KHEB
- ☒ 3. AXUR
- ☒ 4. OKJH

Q.59 Which of the following options should come in place of the question mark (?) in the given series based on the English alphabetical order?

HKN, ILO, JMP, KNQ, ?

Ans

- ☒ 1. LOR
- ☒ 2. LRO
- ☒ 3. ORL
- ☒ 4. OLR

Q.60 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?

$$4\ C\ 8\ D\ 9\ A\ 3\ B\ 2 = ?$$

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

Q.61 In an election between two candidates, one candidate got 40% of total votes and yet lost by 1000 votes. If all the votes polled were valid, then the total number of votes cast in the election was:

- Ans**
- ☐ 1. 6000
 - ☒ 2. 5000
 - ☐ 3. 10,000
 - ☐ 4. 8000

Q.62 Who among the following received the 2024 Padma Bhushan award for Literature and Education-Journalism?

- Ans**
- ☐ 1. Ram Naik
 - ☐ 2. Ashwin B Mehta
 - ☒ 3. Hormusji N Cama
 - ☐ 4. Pyarelal Sharma

Q.63 How does resistance depend on the cross-sectional area A of a conductor?

- Ans**
- ☐ 1. Does not depend on A
 - ☐ 2. Proportional to A
 - ☐ 3. Proportional to A^2
 - ☒ 4. Inversely proportional to A

Q.64 How many spherical solid marbles, each having a radius of 0.2 cm, can be made from a solid sphere having a radius of 6 cm?

- Ans**
- ☒ 1. 27000
 - ☐ 2. 18000
 - ☐ 3. 21000
 - ☐ 4. 9000

Q.65 Visitors to a show were charged ₹15 each on the first day, ₹7.50 on the second day, and ₹2.50 on the third day, and total attendance on the three days was in ratio 2 : 5 : 13, respectively. The average charge per person for the whole show is:

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

Q.66 Which of the following has the highest basicity?

- Ans**
- ☒ 1. Sodium hydroxide
 - ☐ 2. Saliva
 - ☐ 3. Tap water
 - ☐ 4. Blood

Q.67 Which modes of reproduction is used by unicellular organisms?

- Ans**
- ☐ 1. Budding, regeneration and fission
 - ☐ 2. Only regeneration
 - ☐ 3. Only budding
 - ☒ 4. Only fission

Q.68 Which of the following pairs is INCORRECTLY matched according to mode of reproduction?

- Ans**
- ☒ 1. Bryophyllum – Spore formation
 - ☐ 2. Amoeba – Binary fission
 - ☐ 3. Spirogyra – Fragmentation
 - ☐ 4. Hydra – Budding

Q.69 Seven boxes A, B, C, L, X, Y and Z are kept one over the other but not necessarily in the same order. Only three boxes are kept above X. Only one box is kept between Z and X. Only three boxes are kept between Z and A. A is kept at some place above X. C is kept immediately below A. L is kept at one of the places above Y. B is not kept immediately above or below Z.

Which box is kept at the lowermost position?

- Ans**
- ☒ 1. Y
 - ☐ 2. Z
 - ☐ 3. C
 - ☐ 4. B

Q.70 Which single-celled organism divides into many daughter cells simultaneously by multiple fission?

- Ans**
- ☐ 1. Amoeba
 - ☐ 2. Yeast
 - ☒ 3. Plasmodium
 - ☐ 4. Leishmania

Q.71 Who among the following received the Major Dhyan Chand Khel Ratna Award 2023 from the Indian President in January 2024?

- Ans**
- ☐ 1. Shri Mohammed Shami
 - ☐ 2. Ms. Aditi Gopichand Swami
 - ☐ 3. Shri Ojas Pravin Deotale
 - ☒ 4. Shri Chirag Chandrashekhhar Shetty

Q.72 If $3.2 : x :: x : 16.2$, and $x > 0$, then find the value of x .

- Ans**
- ☐ 1. 5.4
 - ☒ 2. 7.2
 - ☐ 3. 9.7
 - ☐ 4. 6.3

Q.73 Which of the following sentences is correct if an object is in uniform motion?

- Ans**
- ☒ 1. The object moves with a constant speed.
 - ☐ 2. The object moves with varying speeds.
 - ☐ 3. The object does not travel equal distances with respect to equal time intervals.
 - ☐ 4. The object travels with different acceleration.

Q.74 $75 \times 75 + 2 \times 75 \times 25 + 25 \times 25$ is equal to:

- Ans**
- ☐ 1. 6250
 - ☐ 2. 7500
 - ☐ 3. 3750
 - ☒ 4. 10000

Q.75 An object floats on a liquid if the density of the object is:

- Ans**
- ☐ 1. greater than the density of the liquid
 - ☒ 2. less than the density of the liquid
 - ☐ 3. exactly twice the density of the liquid
 - ☐ 4. equal to the density of the liquid

Q.76 The Public Examinations (Prevention of Unfair Means) Bill, 2024, proposes a minimum fine of _____ for those involved in organised crimes of cheating.

- Ans**
- ☐ 1. ₹50 Lakh
 - ☐ 2. ₹20 Lakh
 - ☒ 3. ₹1 Crore
 - ☐ 4. ₹10 Lakh

Q.77 What kind of energy is possessed by a moving bullet?

- Ans**
- ☐ 1. Potential energy
 - ☒ 2. Kinetic energy
 - ☐ 3. Electrical energy
 - ☐ 4. Light energy

Q.78 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 : 36 :: 15 : Y

- Ans**
- ☐ 1. X = 9, Y = 42
 - ☒ 2. X = 9, Y = 60
 - ☐ 3. X = 12, Y = 50
 - ☐ 4. X = 12, Y = 60

Q.79 From the four possibilities, suspension has which property?

- Ans**
- ☐ 1. Solid mixture
 - ☒ 2. Heterogeneous mixture
 - ☐ 3. Plasma mixture
 - ☐ 4. Homogenous mixture

Q.80 Shakti starts from Point A and drives 22 km towards South. He then takes a left turn, drives 20 km, turns left and drives 12 km. He then takes a left turn and drives 17 km. He takes a final right turn, drives 10 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. 3 km towards South
 - ☐ 2. 4 km towards North
 - ☒ 3. 3 km towards West
 - ☐ 4. 2 km towards East

Q.81 What happens to the process of diffusion on heating?

- Ans**
- ☐ 1. Diffusion depends on volume of matter.
 - ☐ 2. On heating, diffusion becomes slower.
 - ☐ 3. There is no effect of heating on diffusion.
 - ☒ 4. On heating, diffusion becomes faster.

Q.82 Which of the following is/are termed as nucleons?

- Ans**
- ☐ 1. Only protons
 - ☐ 2. Only electrons
 - ☒ 3. Both protons and neutrons
 - ☐ 4. Only neutrons

Q.83 In 1987, the UNEP succeeded in forging an agreement to freeze Chlorofluorocarbons production at 1986 levels. What is the full form of UNEP?

- Ans**
- ☐ 1. United Nations Ecological Programme
 - ☐ 2. United Nations Environment Policy
 - ☒ 3. United Nations Environment Programme
 - ☐ 4. United Nations Ecological Policy

Q.84 If a person covers 60 km at a speed of 40 km/h and another distance of 120 km at a speed of 80 km/h, then his average speed for the whole journey is:

- Ans**
- ☐ 1. 48 km/h
 - ☐ 2. 50 km/h
 - ☒ 3. 60 km/h
 - ☐ 4. 55 km/h

Q.85 Which phenomenon is responsible for the twinkling of a star?

- Ans
- ☐ 1. Reflection
 - ☐ 2. Scattering
 - ☐ 3. Total internal reflection
 - ☒ 4. Atmospheric refraction

Q.86 In which of the following organisms is spore formation seen?

- Ans
- ☐ 1. Paramecium
 - ☐ 2. Amoeba
 - ☒ 3. Rhizopus
 - ☐ 4. Plasmodium

Q.87 The average of ten numbers is 7. If 21 is added to each number, then the average of the new set of numbers will be:

- Ans
- ☐ 1. 19
 - ☐ 2. 31
 - ☒ 3. 28
 - ☐ 4. 7

Q.88 In September 2024, Prime Minister Modi launched how many Param Rudra Super Computing Systems and a High Performance Computing (HPC) system for weather and climate research?

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

Q.89 A single cell may constitute a whole organism in all of the following, EXCEPT:

- Ans
- ☐ 1. Chlamydomonas
 - ☐ 2. amoeba
 - ☒ 3. Rhizopus
 - ☐ 4. bacteria

Q.90 Which of the following are parts of the peripheral nervous system?

- Ans
- ☐ 1. Only cranial nerves
 - ☒ 2. Both cranial and spinal nerves
 - ☐ 3. Neither cranial nor spinal nerves
 - ☐ 4. Only spinal nerves

Q.91 How many pairs of sex chromosomes are present in humans?

- Ans
- ☐ 1. Forty six pairs
 - ☐ 2. Two pairs
 - ☐ 3. Twenty two pairs
 - ☒ 4. One pair

Q.92 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) 3 4 8 5 6 9 2 2 1 6 6 9 3 2 4 8 9 1 6 8 3 2 2 3 8 3 2 1 (Right)

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

Ans

✓ 1. 2

✗ 2. 3

✗ 3. 1

✗ 4. 0

Q.93 A, B, E, G, P, L and M are sitting around a circular table facing the centre. Only L sits between A and P. P sits third to the left of E. G sits to the immediate left of E. B is not an immediate neighbour of P. Who sits fourth to the left of M?

Ans

✓ 1. B

✗ 2. E

✗ 3. L

✗ 4. A

Q.94 In November 2024, India sent a formal Letter of Intent to the International Olympic Committee to host the Olympics and Paralympics in which of the following years?

Ans

✗ 1. 2034

✗ 2. 2033

✗ 3. 2035

✓ 4. 2036

Q.95 The mass number of sulphur atom is:

Ans

✓ 1. 32

✗ 2. 31

✗ 3. 35.5

✗ 4. 37

Q.96 The perimeter of a rhombus is 100 cm and one of the diagonals is 40 cm. Then the area of the rhombus is

Ans

✗ 1. 1200 cm^2

✓ 2. 600 cm^2

✗ 3. 1000 cm^2

✗ 4. 500 cm^2

Q.97 SOTQ is related to PLQN in a certain way based on the English alphabetical order. In the same way, OKPM is related to LHMJ. To which of the following options is LHMJ related, following the same logic?

Ans

✗ 1. EIJG

✓ 2. IEJG

✗ 3. IEGJ

✗ 4. EIGJ

Q.98 Charge on how many electrons is equivalent to 1 coulomb of electric charge?

- Ans**
- ☒ 1. 1.6×10^{19}
 - ☐ 2. 6×10^{18}
 - ☐ 3. 4.2×10^{16}
 - ☐ 4. 9.1×10^{31}

Q.99 The lengths of the diagonals of a rhombus are 10 cm and 24 cm. The length of the side of the rhombus is:

- Ans**
- ☒ 1. 13 cm
 - ☐ 2. 10 cm
 - ☐ 3. 9 cm
 - ☐ 4. 8 cm

Q.100 Transparency International's Corruption Perceptions Index ranked India _____ out of 180 countries, indicating a persistent struggle with public sector corruption.

- Ans**
- ☐ 1. 73rd
 - ☒ 2. 93rd
 - ☐ 3. 83rd
 - ☐ 4. 103rd