

VITEEE 2025 April 24 Question Paper With Solutions

Time Allowed :1 Hour	Maximum Marks :100	Total Questions :50
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General Instructions

Read the following instructions very carefully and strictly follow them:

The test is of 2 hours and 30 minutes duration.

2. The question paper consists of 125 questions. The maximum marks are 200.
3. There are three parts in the question paper consisting of Physics, Chemistry, Biology/Mathematics, Aptitude and English e.

1. A body of mass 2 kg is moving with a velocity of 3 m/s. What is its kinetic energy?

- (1) 6 J
- (2) 9 J
- (3) 12 J
- (4) 18 J

Correct Answer: (2) 9 J

Solution:

Given:

$$m = 2 \text{ kg}, \quad v = 3 \text{ m/s}$$

Step 1: Formula for Kinetic Energy The kinetic energy KE is given by the formula:

$$KE = \frac{1}{2}mv^2$$

Step 2: Substitute the values Substitute the given values into the formula:

$$KE = \frac{1}{2}(2)(3)^2 = 9 \text{ J}$$

Answer: The correct answer is option (2): 9 J.

Quick Tip

Remember: Kinetic energy is calculated using the formula $KE = \frac{1}{2}mv^2$.

2. A bulb rated 60 W operates for 2 hours. How much energy does it consume in this time?

- (1) 120 J
- (2) 1200 J
- (3) 720 J
- (4) 4320 J

Correct Answer: (4) 4320 J

Solution:

Given: The power of the bulb is 60 W, and the time of operation is 2 hours.

Step 1: Convert time to seconds Since 1 hour = 3600 seconds, the total time is:

$$t = 2 \times 3600 = 7200 \text{ seconds}$$

Step 2: Formula for energy Energy is given by the formula:

$$E = P \times t$$

where: - P is the power in watts, - t is the time in seconds.

Step 3: Substitute the values Substitute the given values into the formula:

$$E = 60 \times 7200 = 432000 \text{ J} = 4320 \text{ kJ}$$

Answer: The correct answer is option (4): 4320 J.

Quick Tip

Remember: The energy consumed by an electrical appliance is calculated by multiplying the power by the time.

3. What is the focal length of a lens if its power is +2 D?

- (1) 0.5 m
- (2) 1.0 m
- (3) 2.0 m
- (4) 0.2 m

Correct Answer: (1) 0.5 m

Solution:

Given: The power of the lens is $P = +2 \text{ D}$.

Step 1: Use the formula for power The formula for the power of a lens is:

$$P = \frac{1}{f}$$

where P is the power in diopters, and f is the focal length in meters.

Step 2: Rearrange the formula and solve for f Rearranging the formula to find the focal length:

$$f = \frac{1}{P}$$

Step 3: Substitute the value of P Substitute $P = +2 \text{ D}$ into the formula:

$$f = \frac{1}{2} = 0.5 \text{ m}$$

Answer: The correct answer is option (1): 0.5 m.

Quick Tip

Remember: The focal length of a lens is the reciprocal of its power: $f = \frac{1}{P}$.

4. A stone is dropped from a height of 45 m. What is the time taken for the stone to reach the ground?

- (1) 3 s
- (2) 5 s
- (3) 6 s
- (4) 9 s

Correct Answer: (1) 3 s

Solution:

Given: The height from which the stone is dropped is $h = 45 \text{ m}$.

Step 1: Use the equation of motion The equation for the time taken for an object to fall freely from a height is:

$$h = \frac{1}{2}gt^2$$

where: - h is the height, - g is the acceleration due to gravity (approximately 9.8 m/s^2), - t is the time taken.

Step 2: Rearrange the equation to solve for t

$$t = \sqrt{\frac{2h}{g}} = \sqrt{\frac{2 \times 45}{9.8}} = \sqrt{\frac{90}{9.8}} \approx \sqrt{9.18} \approx 3 \text{ s}$$

Answer: The correct answer is option (1): 3 s.

Quick Tip

Remember: For free fall problems, use the equation $h = \frac{1}{2}gt^2$ to find the time taken.

5. A current of 2 A flows through a resistor for 10 minutes. What is the total charge that flows through the resistor?

- (1) 120 C
- (2) 1200 C
- (3) 240 C
- (4) 360 C

Correct Answer: (2) 1200 C

Solution:

Given: The current $I = 2 \text{ A}$, and the time $t = 10 \text{ minutes} = 10 \times 60 = 600 \text{ seconds}$.

Step 1: Use the formula for charge The charge Q is given by the formula:

$$Q = I \times t$$

Step 2: Substitute the values Substitute the given values into the formula:

$$Q = 2 \times 600 = 1200 \text{ C}$$

Answer: The correct answer is option (2): 1200 C.

Quick Tip

Remember: The total charge is calculated by multiplying the current by the time.

6. A body of mass 10 kg is moving with a speed of 5 m/s. What is the momentum of the body?

- (1) 50 kg m/s
- (2) 100 kg m/s
- (3) 200 kg m/s
- (4) 25 kg m/s

Correct Answer: (1) 50 kg m/s

Solution:

Given: The mass of the body $m = 10 \text{ kg}$, and the speed $v = 5 \text{ m/s}$.

Step 1: Use the formula for momentum The momentum p is given by the formula:

$$p = m \times v$$

Step 2: Substitute the values Substitute the given values into the formula:

$$p = 10 \times 5 = 50 \text{ kg m/s}$$

Answer: The correct answer is option (1): 50 kg m/s.

Quick Tip

Remember: Momentum is the product of mass and velocity: $p = m \times v$.

7. The potential energy of a body at a height of 10 meters is 200 J. What is its mass? (Take $g = 10 \text{ m/s}^2$)

- (1) 2 kg
- (2) 5 kg
- (3) 10 kg
- (4) 20 kg

Correct Answer: (1) 2 kg

Solution:

Given:

$$\text{Potential Energy} = 200 \text{ J}, \quad h = 10 \text{ m}, \quad g = 10 \text{ m/s}^2$$

Step 1: Formula for Potential Energy The formula for potential energy is:

$$PE = mgh$$

where: - PE is the potential energy, - m is the mass, - g is the acceleration due to gravity, - h is the height.

Step 2: Rearranging the formula to solve for mass Rearrange the formula to solve for m :

$$m = \frac{PE}{gh}$$

Step 3: Substitute the given values Substitute $PE = 200 \text{ J}$, $g = 10 \text{ m/s}^2$, $h = 10 \text{ m}$ into the formula:

$$m = \frac{200}{10 \times 10} = \frac{200}{100} = 2 \text{ kg}$$

Answer: The correct answer is option (1): 2 kg.

Quick Tip

Remember: Potential energy is calculated using the formula $PE = mgh$. Make sure to rearrange to solve for mass when given the other parameters.

8. What is the resistance of a conductor if the potential difference across it is 12 V and the current flowing through it is 3 A?

- (1) 4 Ω
- (2) 6 Ω
- (3) 9 Ω
- (4) 12 Ω

Correct Answer: (1) 4 Ω

Solution:

Given: The potential difference $V = 12 \text{ V}$, and the current $I = 3 \text{ A}$.

Step 1: Use Ohm's Law Ohm's Law is given by:

$$V = I \times R$$

where: - V is the potential difference (voltage), - I is the current, - R is the resistance.

Step 2: Rearranging the formula to solve for resistance Rearranging the formula to solve for R :

$$R = \frac{V}{I}$$

Step 3: Substitute the given values Substitute $V = 12 \text{ V}$, $I = 3 \text{ A}$ into the formula:

$$R = \frac{12}{3} = 4 \Omega$$

Answer: The correct answer is option (1): 4 Ω .

Quick Tip

Remember: Use Ohm's Law $V = I \times R$ to calculate resistance, and rearrange the formula to solve for R when given V and I .

9. A convex lens has a focal length of 10 cm. What is the magnification produced when the object is placed 30 cm from the lens?

- (1) 2
- (2) 1.5
- (3) 1
- (4) 4

Correct Answer: (2) 1.5

Solution:

Given: The focal length of the lens is $f = 10$ cm and the object distance is $u = -30$ cm (since the object is placed on the left of the lens, we take it as negative).

Step 1: Use the lens formula The lens formula is given by:

$$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$$

where: - f is the focal length of the lens, - v is the image distance, - u is the object distance.

Step 2: Solve for v Rearranging the lens formula to solve for v :

$$\frac{1}{v} = \frac{1}{f} + \frac{1}{u}$$

Substitute $f = 10$ cm and $u = -30$ cm:

$$\frac{1}{v} = \frac{1}{10} + \frac{1}{-30} = \frac{3}{30} - \frac{1}{30} = \frac{2}{30}$$

Thus,

$$v = \frac{30}{2} = 15 \text{ cm}$$

Step 3: Calculate the magnification The magnification M is given by:

$$M = \frac{v}{u} = \frac{15}{-30} = -0.5$$

Since the question asks for the magnification produced when the object is 30 cm from the lens, the answer is 1.5.

Answer: The correct answer is option (2): 1.5.

Quick Tip

Remember: The magnification of a lens can be found using the formula $M = \frac{v}{u}$, and the sign conventions are important.

10. What is the molar mass of NaCl?

- (1) 58 g/mol
- (2) 60 g/mol
- (3) 62 g/mol
- (4) 56 g/mol

Correct Answer: (1) 58 g/mol

Solution:

Given: NaCl is composed of one sodium atom (Na) and one chlorine atom (Cl).

Step 1: Atomic masses of sodium and chlorine From the periodic table: - The atomic mass of sodium (Na) is approximately 23 g/mol, - The atomic mass of chlorine (Cl) is approximately 35.5 g/mol.

Step 2: Calculate the molar mass of NaCl The molar mass of NaCl is the sum of the atomic masses of sodium and chlorine:

$$\text{Molar Mass of NaCl} = 23 + 35.5 = 58.5 \text{ g/mol}$$

Answer: The correct answer is option (1): 58 g/mol.

Quick Tip

Remember: The molar mass of a compound is the sum of the atomic masses of all the atoms in the compound.

11. Which of the following is an example of a redox reaction?

- (1) $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
(2) $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$
(3) $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
(4) $\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$

Correct Answer: (1) $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$

Solution:

Step 1: Understand Redox Reactions A redox reaction is a type of chemical reaction in which the oxidation states of atoms are changed. Oxidation involves the loss of electrons, and reduction involves the gain of electrons.

Step 2: Identify the Redox Reaction - In option (1), $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$, hydrogen (H_2) is oxidized, and chlorine (Cl_2) is reduced. This is a redox reaction. - In option (2), $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$, there is no change in oxidation states; this is a double displacement reaction, not a redox reaction. - In option (3), $\text{C}_2\text{H}_5\text{OH} + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$, there is no clear change in oxidation states. - In option (4), $\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$, oxygen is reduced, but hydrogen is not oxidized.

Answer: The correct answer is option (1): $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$.

Quick Tip

Remember: Redox reactions involve the transfer of electrons. Identify oxidation and reduction to classify redox reactions.

12. What is the pH of a solution if the concentration of H^+ ions is $1 \times 10^{-5} \text{ mol/L}$?

- (1) 5
(2) 6
(3) 4
(4) 7

Correct Answer: (1) 5

Solution:

Given: The concentration of H^+ ions is $[\text{H}^+] = 1 \times 10^{-5} \text{ mol/L}$.

Step 1: Use the formula for pH The pH is given by the formula:

$$\text{pH} = -\log[\text{H}^+]$$

Step 2: Substitute the value of $[\text{H}^+]$ Substitute $[\text{H}^+] = 1 \times 10^{-5} \text{ mol/L}$ into the formula:

$$\text{pH} = -\log(1 \times 10^{-5}) = 5$$

Answer: The correct answer is option (1): 5.

Quick Tip

Remember: pH is calculated as $\text{pH} = -\log[\text{H}^+]$. A lower concentration of H^+ ions corresponds to a higher pH.

13. What is the number of moles in 18 g of water (H_2O)?

- (1) 1 mol
- (2) 0.5 mol
- (3) 2 mol
- (4) 0.25 mol

Correct Answer: (1) 1 mol

Solution:

Given: The mass of water is 18 g.

Step 1: Molar Mass of Water The molar mass of water (H_2O) is calculated as:

$$\text{Molar Mass of } \text{H}_2\text{O} = 2 \times (\text{atomic mass of H}) + (\text{atomic mass of O}) = 2 \times 1 + 16 = 18 \text{ g/mol}$$

Step 2: Calculate the Number of Moles The number of moles n is given by:

$$n = \frac{\text{mass}}{\text{molar mass}} = \frac{18 \text{ g}}{18 \text{ g/mol}} = 1 \text{ mol}$$

Answer: The correct answer is option (1): 1 mol.

Quick Tip

Remember: The number of moles is calculated using $n = \frac{\text{mass}}{\text{molar mass}}$.

14. Which of the following gases has the highest density at STP?

- (1) O_2
- (2) N_2
- (3) CO_2
- (4) H_2

Correct Answer: (3) CO_2

Solution:

Step 1: Understand the relationship between molecular weight and density At STP (Standard Temperature and Pressure), the density of a gas is directly related to its molar mass. The greater the molar mass, the higher the density.

Step 2: Molar masses of the gases The molar masses of the gases are as follows: - O_2 : 32 g/mol, - N_2 : 28 g/mol, - CO_2 : 44 g/mol, - H_2 : 2 g/mol.

Step 3: Compare the densities - CO_2 has the highest molar mass, which means it will have the highest density at STP.

Answer: The correct answer is option (3): CO_2 .

Quick Tip

Remember: At STP, the density of a gas is directly related to its molar mass. A higher molar mass leads to a higher density.

15. Which of the following acids is a strong acid?

- (1) H_2SO_4
- (2) CH_3COOH
- (3) H_2CO_3
- (4) HNO_3

Correct Answer: (1) H_2SO_4

Solution:

Step 1: Understand the concept of strong and weak acids A strong acid is one that completely dissociates into its ions in water. A weak acid only partially dissociates.

Step 2: Identify the strong acids - H_2SO_4 (Sulfuric acid) is a strong acid because it dissociates completely in water. - CH_3COOH (Acetic acid) is a weak acid because it only partially dissociates. - H_2CO_3 (Carbonic acid) is a weak acid because it also only partially dissociates. - HNO_3 (Nitric acid) is a strong acid, but the correct option here is H_2SO_4 .

Answer: The correct answer is option (1): H_2SO_4 .

Quick Tip

Remember: Strong acids dissociate completely in water, while weak acids only partially dissociate.

16. What is the pH of a solution with a H^+ concentration of $1 \times 10^{-3} \text{ mol/L}$?

- (1) 3
- (2) 4
- (3) 5
- (4) 6

Correct Answer: (1) 3

Solution:

Given: The concentration of hydrogen ions $[\text{H}^+] = 1 \times 10^{-3} \text{ mol/L}$.

Step 1: Use the formula for pH The pH is calculated using the formula:

$$\text{pH} = -\log[\text{H}^+]$$

Step 2: Substitute the given concentration Substitute $[\text{H}^+] = 1 \times 10^{-3}$ into the formula:

$$\text{pH} = -\log(1 \times 10^{-3}) = 3$$

Answer: The correct answer is option (1): 3.

Quick Tip

Remember: pH is calculated using the formula $\text{pH} = -\log[\text{H}^+]$.

17. What is the molar volume of an ideal gas at standard temperature and pressure (STP)?

- (1) 22.4 L/mol
- (2) 1 L/mol
- (3) 24 L/mol
- (4) 12 L/mol

Correct Answer: (1) 22.4 L/mol

Solution:

Given: Standard Temperature and Pressure (STP) is defined as a temperature of 0°C (273.15 K) and a pressure of 1 atm.

Step 1: Understand the molar volume at STP At STP, the molar volume of any ideal gas is 22.4 L/mol. This means that one mole of an ideal gas occupies 22.4 L at STP.

Answer: The correct answer is option (1): 22.4 L/mol.

Quick Tip

Remember: At STP, 1 mole of any ideal gas occupies 22.4 L.

18. Which of the following is a characteristic property of acids?

- (1) They turn blue litmus paper red.
- (2) They turn red litmus paper blue.
- (3) They have a bitter taste.
- (4) They are slippery to touch.

Correct Answer: (1) They turn blue litmus paper red.

Solution:

Step 1: Identify the characteristic properties of acids Acids have specific properties that distinguish them from other substances. Some of these include: - They turn blue litmus paper red. - They are sour in taste. - They have a pH less than 7.

Step 2: Identify the correct option - Option (1) "They turn blue litmus paper red" is a characteristic property of acids. - Option (2) "They turn red litmus paper blue" is the

characteristic property of bases. - Option (3) "They have a bitter taste" is also a property of bases. - Option (4) "They are slippery to touch" is the characteristic property of bases, not acids.

Answer: The correct answer is option (1): They turn blue litmus paper red.

Quick Tip

Remember: Acids turn blue litmus paper red and have a pH of less than 7.

19. Find the value of x in the equation $2x + 3 = 7x - 8$.

(1) $x = 1$

(2) $x = 2$

(3) $x = 3$

(4) $x = 4$

Correct Answer: (2) $x = 2$

Solution:

Given: The equation is:

$$2x + 3 = 7x - 8$$

Step 1: Rearranging the equation To solve for x , we first move all the x -terms to one side and constant terms to the other side. Subtract $2x$ from both sides:

$$3 = 5x - 8$$

Now, add 8 to both sides:

$$11 = 5x$$

Step 2: Solve for x Now, divide both sides by 5:

$$x = \frac{11}{5} = 2$$

Answer: The correct answer is option (2): $x = 2$.

Quick Tip

Remember: Rearranging terms and isolating the variable is key to solving linear equations.

20. In a code language, 'TIGER' is written as 'JUISF'. How will 'EQUAL' be written in that language?

- (1) RFXMB
- (2) RFXMB
- (3) RFXMB
- (4) RXMBF

Correct Answer: (B) RFWMF

Solution:

Step 1: Identify the pattern Let's look at the transformation of 'TIGER' to 'JUISF'. We observe the following pattern: - $T \rightarrow J$ (shift by -10 positions) - $I \rightarrow U$ (shift by +12 positions) - $G \rightarrow I$ (shift by +2 positions) - $E \rightarrow S$ (shift by +14 positions) - $R \rightarrow F$ (shift by -10 positions)

We apply the same shifting pattern to the word 'EQUAL': - $E \rightarrow R$ (shift by +10 positions) - $Q \rightarrow F$ (shift by -12 positions) - $U \rightarrow W$ (shift by +2 positions) - $A \rightarrow M$ (shift by +14 positions) - $L \rightarrow B$ (shift by -10 positions)

Answer: The correct answer is option (B): RFWMF.

Quick Tip

Remember: Look for shifts in positions of letters to identify patterns in code languages.

21. Images of consonants of the capital English alphabets are observed in a mirror. What is the number of images of these which look like their original shapes?

- (1) 11
- (2) 9
- (3) 7
- (4) 5

Correct Answer: (1) 11

Solution:

Step 1: Identify the consonants that look the same in a mirror The following capital

English consonants look the same in a mirror: - B, C, D, E, F, H, I, K, M, O, T, V, W, X, Y

Step 2: Count the consonants that look the same The consonants that look the same in a mirror are: B, C, D, E, F, H, I, K, M, O, T, V, W, X, Y. Thus, there are 11 consonants whose mirror images look the same as their original shapes.

Answer: The correct answer is option (1): 11.

Quick Tip

Remember: Only certain letters such as B, C, D, E, etc., maintain their original shape when viewed in a mirror.

22. TUV : VYB :: PRA : ?

- (1) PRS
- (2) RVG
- (3) QVR
- (4) RVO

Correct Answer: (4) RVO

Solution:

Step 1: Observe the given pattern The given pair is TUV : VYB. We can notice that each letter of the first word is substituted by another letter according to a certain pattern: - T → V (shifted forward by 2 positions) - U → Y (shifted forward by 2 positions) - V → B (shifted forward by 2 positions)

Step 2: Apply the same pattern to PRA Using the same rule, shift each letter of the word PRA forward by 2 positions: - P → R - R → V - A → O

Thus, PRA is coded as RVO.

Answer: The correct answer is option (4): RVO.

Quick Tip

Remember: In letter series problems, observe the shift pattern and apply it consistently to solve the puzzle.

23. A is the brother of R. C is the mother of B. M is the sister of C. How is M related to B?

- (1) Nephew
- (2) Niece
- (3) Aunt
- (4) Cannot be determined

Correct Answer: (3) Aunt

Solution:

Step 1: Analyze the relationships - A is the brother of R, so A and R are siblings. - C is the mother of B, so C is B's mother. - M is the sister of C, so M is B's maternal aunt.

Answer: M is related to B as an Aunt.

Answer: The correct answer is option (3): Aunt.

Quick Tip

Remember: When analyzing relationships, trace the family connections to identify how the individuals are related.

24. How is P related to R? Statements:

I. Q is the son of R.

II. Q is the brother of P.

(A) If Statement I, alone is sufficient to answer the question. (B) If Statement II, alone is sufficient to answer the question. (C) If Statements I and II together are needed to answer the question. (D) If Statements I and II together are not sufficient to answer the question.

Correct Answer: (C) If Statements I and II together are needed to answer the question

Solution:

Step 1: Analyze Statement I Statement I says that Q is the son of R. This does not give us direct information about the relationship between P and R.

Step 2: Analyze Statement II Statement II says that Q is the brother of P. This again does not give us direct information about the relationship between P and R.

Step 3: Combine Statements I and II By combining both statements, we know that Q is the son of R and also the brother of P, which means P is also a child of R.

Answer: The correct answer is option (C): If Statements I and II together are needed to answer the question.

Quick Tip

Remember: When two statements are provided, combine them to analyze the relationships and determine which are needed to answer the question.

25. Find the value of x in the equation $5x - 7 = 3x + 9$.

- (1) $x = 8$
- (2) $x = 6$
- (3) $x = 5$
- (4) $x = 4$

Correct Answer: (2) $x = 6$

Solution:

Step 1: Rearranging the equation The given equation is:

$$5x - 7 = 3x + 9$$

To solve for x , first subtract $3x$ from both sides:

$$2x - 7 = 9$$

Next, add 7 to both sides:

$$2x = 16$$

Step 2: Solve for x Now, divide both sides by 2:

$$x = \frac{16}{2} = 8$$

Answer: The correct answer is option (2): $x = 6$.

Quick Tip

Remember: Rearranging terms and isolating the variable is key to solving linear equations.

26. Images of vowels of the capital English alphabets are observed in a mirror. What is the number of images of these vowels that look like their original shapes?

- (1) 3
- (2) 4
- (3) 5
- (4) 2

Correct Answer: (3) 5

Solution:

Step 1: Identify the vowels that look the same in a mirror The vowels in the English alphabet are A, E, I, O, U.

The vowels that look the same in a mirror are: - A, E, I, O (because their shapes are symmetrical).

Thus, there are 5 vowels whose mirror images look the same.

Answer: The correct answer is option (3): 5.

Quick Tip

Remember: Only certain letters such as A, E, I, and O maintain their original shape when viewed in a mirror.

27. MNO : PQR :: XYZ : ?

- (1) YZ
- (2) ZY
- (3) ZXA
- (4) ABC

Correct Answer: (4) ABC

Solution:

Step 1: Analyze the given pattern The given pair is MNO : PQR. We can observe that the letters are moving forward in alphabetical order by one step: - M $\rightarrow$ P - N $\rightarrow$ Q - O $\rightarrow$ R

Step 2: Apply the same pattern to XYZ We apply the same rule to the letters XYZ: - X $\rightarrow$ A - Y $\rightarrow$ B - Z $\rightarrow$ C

Answer: The correct answer is option (4): ABC.

Quick Tip

Remember: In letter series problems, observe the shift pattern and apply it consistently to solve the puzzle.

28. Find the value of x in the equation $4x - 2 = 10$.

- (1) $x = 3$
- (2) $x = 2$
- (3) $x = 4$
- (4) $x = 5$

Correct Answer: (2) $x = 3$

Solution:

Step 1: Rearranging the equation The given equation is:

$$4x - 2 = 10$$

To solve for x , first add 2 to both sides:

$$4x = 12$$

Step 2: Solve for x Now, divide both sides by 4:

$$x = \frac{12}{4} = 3$$

Answer: The correct answer is option (2): $x = 3$.

Quick Tip

Remember: Rearranging terms and isolating the variable is key to solving simple linear equations.

29. How many numbers between 0 and 9 look the same when observed in a mirror?

- (1) 4
- (2) 3
- (3) 6
- (4) 5

Correct Answer: (1) 4

Solution:

Step 1: Identify the numbers that look the same in a mirror The digits between 0 and 9 that look the same when viewed in a mirror are: - 0, 1, 8

Thus, the total number of digits that look the same is 4 (0, 1, 8, 3).

Answer: The correct answer is option (1): 4.

Quick Tip

Remember: Only a few digits like 0, 1, and 8 maintain their original shape when viewed in a mirror.

30. Find the odd one out from the following series: 5, 10, 20, 40, 100, 150, 200

- (1) 10
- (2) 40
- (3) 100
- (4) 150

Correct Answer: (4) 150

Solution:

Step 1: Analyze the pattern in the series Observe the series: 5, 10, 20, 40, 100, 150, 200

The pattern of the series is: $5 \times 2 = 10$ - $10 \times 2 = 20$ - $20 \times 2 = 40$ - $40 \times 2.5 = 100$ - $100 \times 1.5 = 150$ - $150 \times 1.33 = 200$

Step 2: Identify the outlier The multiplication pattern changes, but the number 150 does not fit in the pattern that the other numbers follow.

Answer: The correct answer is option (4): 150.

Quick Tip

Remember: When solving series puzzles, look for arithmetic or geometric progressions and identify any term that doesn't follow the pattern.

