SRMJEEE 2025 Question Paper with Solutions - Memory Based

Time Allowed :2 hours 30 minutes	**Maximum Marks :**125	**Total Questions :**125

General Instructions for SRMJEEE 2025

Read the following instructions carefully and follow them strictly:

1. The SRMJEEE 2025 question paper consists of multiple-choice questions (MCQs) covering topics from Physics, Chemistry, Mathematics/Biology, English, and Aptitude.
2. The question paper is divided into five sections:
   - Section A: Physics
   - Section B: Chemistry
   - Section C: Mathematics (or Biology for Biotechnology aspirants)
   - Section D: English
   - Section E: Aptitude
3. There are a total of 125 questions in the paper.
4. Each question carries 1 mark. There is no negative marking for incorrect answers.
5. All questions are compulsory.
6. Write your Roll Number, Name, and Signature in the designated spaces on the OMR sheet.
7. The duration of the examination is 2 hours and 30 minutes.
8. No additional time will be provided for filling out personal details on the OMR sheet.

1. The molar conductivities at infinite dilution for NaSO, KSO, KCl, HCl, and HCOONa at 300 K are 260, 308, 150, 426, and 105 S·cm²·mol¹, respectively. What will be the molar conductivity at infinite dilution () for formic acid in the same unit?

(a) 480

(b) 429

(c) 430

(d) 405

Correct Answer: (d) 405

Solution: The molar conductivities at infinite dilution for Na_2SO_4, K_2SO_4, KCl, HCl, and HCOONa at 300 K are 260, 308, 150, 426, and 105 $S{\cdot}cm^2{\cdot}mol^{-1}$, respectively. We need to calculate the molar conductivity at infinite dilution (Λ^0) for formic acid (HCOOH) in the same units.

Using **Kohlrausch's law**, the molar conductivity at infinite dilution of an electrolyte is the sum of the ionic molar conductivities of its ions, weighted by their stoichiometric coefficients:

$$\Lambda^0_{\text{electrolyte}} = \nu_+ \lambda^0_+ + \nu_- \lambda^0_- \tag{1}$$

where ν_+ and ν_- are the number of cations and anions per formula unit, and λ^0_+ and λ^0_- are the ionic molar conductivities at infinite dilution.

Formic acid (HCOOH) dissociates as:

$$\text{HCOOH} \rightarrow \text{H}^+ + \text{HCOO}^-$$

Thus, $\nu_+ = 1$ (for H^+), $\nu_- = 1$ (for $HCOO^-$), and:

$$\Lambda^0_{\text{HCOOH}} = \lambda^0_{\text{H}^+} + \lambda^0_{\text{HCOO}^-} \tag{2}$$

We are given:

- $\Lambda^0_{\text{Na}_2\text{SO}_4} = 260\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$
- $\Lambda^0_{\text{K}_2\text{SO}_4} = 308\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$

- $\Lambda^0_{\text{KCl}} = 150\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$
- $\Lambda^0_{\text{HCl}} = 426\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$
- $\Lambda^0_{\text{HCOONa}} = 105\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$

Our goal is to find $\lambda^0_{\text{H}^+}$ and $\lambda^0_{\text{HCOO}^-}$ to compute Λ^0_{HCOOH}.

Step 1: Apply Kohlrausch's Law to Each Electrolyte

For each electrolyte, we write the molar conductivity as the sum of the ionic conductivities:

1. **Na_2SO_4**: Dissociates as $Na_2SO_4 \rightarrow 2Na^+ + SO_4^{2-}$:

$$\Lambda^0_{\text{Na}_2\text{SO}_4} = 2\lambda^0_{\text{Na}^+} + \lambda^0_{\text{SO}_4^{2-}} = 260$$

2. **K_2SO_4**: Dissociates as $K_2SO_4 \rightarrow 2K^+ + SO_4^{2-}$:

$$\Lambda^0_{\text{K}_2\text{SO}_4} = 2\lambda^0_{\text{K}^+} + \lambda^0_{\text{SO}_4^{2-}} = 308$$

3. **KCl**: Dissociates as $KCl \rightarrow K^+ + Cl^-$:

$$\Lambda^0_{\text{KCl}} = \lambda^0_{\text{K}^+} + \lambda^0_{\text{Cl}^-} = 150$$

4. **HCl**: Dissociates as $HCl \rightarrow H^+ + Cl^-$:

$$\Lambda^0_{\text{HCl}} = \lambda^0_{\text{H}^+} + \lambda^0_{\text{Cl}^-} = 426$$

5. **HCOONa**: Dissociates as $HCOONa \rightarrow Na^+ + HCOO^-$:

$$\Lambda^0_{\text{HCOONa}} = \lambda^0_{\text{Na}^+} + \lambda^0_{\text{HCOO}^-} = 105$$

Step 2: Calculate Ionic Conductivities

We need $\lambda^0_{\text{H}^+}$ and $\lambda^0_{\text{HCOO}^-}$. Let's solve for these using the given equations.

Find $\lambda^0_{\text{HCOO}^-}$:

From the equation for HCOONa:

$$\lambda^0_{\text{Na}^+} + \lambda^0_{\text{HCOO}^-} = 105 \tag{5}$$

We need $\lambda^0_{\text{Na}^+}$. Use the equations for Na_2SO_4 and K_2SO_4 to find $\lambda^0_{\text{Na}^+}$:

$$2\lambda^0_{\text{Na}^+} + \lambda^0_{\text{SO}_4^{2-}} = 260 \tag{1}$$

$$2\lambda^0_{\text{K}^+} + \lambda^0_{\text{SO}_4^{2-}} = 308 \tag{2}$$

Subtract (1) from (2) to eliminate $\lambda^0_{\text{SO}_4^{2-}}$:

$$(2\lambda^0_{\text{K}^+} + \lambda^0_{\text{SO}_4^{2-}}) - (2\lambda^0_{\text{Na}^+} + \lambda^0_{\text{SO}_4^{2-}}) = 308 - 260$$

$$2\lambda^0_{\text{K}^+} - 2\lambda^0_{\text{Na}^+} = 48$$

$$\lambda^0_{\text{K}^+} - \lambda^0_{\text{Na}^+} = 24 \tag{6}$$

Now, use the equation for KCl:

$$\lambda^0_{\text{K}^+} + \lambda^0_{\text{Cl}^-} = 150 \tag{3}$$

We need $\lambda^0_{\text{K}^+}$. Let's find $\lambda^0_{\text{Cl}^-}$ using HCl:

$$\lambda^0_{\text{H}^+} + \lambda^0_{\text{Cl}^-} = 426 \tag{4}$$

We don't have $\lambda^0_{\text{H}^+}$ yet, so let's try to find $\lambda^0_{\text{Na}^+}$ and $\lambda^0_{\text{K}^+}$ first. From (6):

$$\lambda^0_{\text{K}^+} = \lambda^0_{\text{Na}^+} + 24$$

Substitute into (3):

$$(\lambda^0_{\text{Na}^+} + 24) + \lambda^0_{\text{Cl}^-} = 150$$

$$\lambda^0_{Na^+} + \lambda^0_{Cl^-} = 126 \tag{7}$$

Now we have two equations involving $\lambda^0_{Na^+}$:

$$\lambda^0_{Na^+} + \lambda^0_{HCOO^-} = 105 \tag{5}$$

$$\lambda^0_{Na^+} + \lambda^0_{Cl^-} = 126 \tag{7}$$

To find $\lambda^0_{HCOO^-}$, we need $\lambda^0_{Na^+}$. Let's find $\lambda^0_{Cl^-}$ and $\lambda^0_{K^+}$ to proceed. Substitute $\lambda^0_{K^+} = \lambda^0_{Na^+} + 24$ into the equation for K_2SO_4 and combine with Na_2SO_4. Instead, let's try to find $\lambda^0_{Cl^-}$ and $\lambda^0_{H^+}$ directly.

Find $\lambda^0_{H^+}$ and $\lambda^0_{Cl^-}$:

From HCl:

$$\lambda^0_{H^+} + \lambda^0_{Cl^-} = 426 \tag{4}$$

From KCl:

$$\lambda^0_{K^+} + \lambda^0_{Cl^-} = 150 \tag{3}$$

We need $\lambda^0_{K^+}$. Use (6) and solve later. Let's try to find $\lambda^0_{Na^+}$ and $\lambda^0_{HCOO^-}$ first.
Subtract (7) from (5):

$$(\lambda^0_{Na^+} + \lambda^0_{HCOO^-}) - (\lambda^0_{Na^+} + \lambda^0_{Cl^-}) = 105 - 126$$

$$\lambda^0_{HCOO^-} - \lambda^0_{Cl^-} = -21$$

$$\lambda^0_{Cl^-} = \lambda^0_{HCOO^-} + 21 \tag{8}$$

Substitute into (7):

$$\lambda^0_{Na^+} + (\lambda^0_{HCOO^-} + 21) = 126$$

$$\lambda^0_{\text{Na}^+} + \lambda^0_{\text{HCOO}^-} = 105 \tag{9}$$

This is consistent with (5). Let's find $\lambda^0_{\text{K}^+}$ using (3) and (8):

$$\lambda^0_{\text{K}^+} + (\lambda^0_{\text{HCOO}^-} + 21) = 150$$

$$\lambda^0_{\text{K}^+} + \lambda^0_{\text{HCOO}^-} = 129 \tag{10}$$

Now use (6):

$$\lambda^0_{\text{K}^+} = \lambda^0_{\text{Na}^+} + 24$$

Substitute into (10):

$$(\lambda^0_{\text{Na}^+} + 24) + \lambda^0_{\text{HCOO}^-} = 129$$

$$\lambda^0_{\text{Na}^+} + \lambda^0_{\text{HCOO}^-} = 105 \tag{11}$$

This matches (5), confirming consistency. Let's find $\lambda^0_{\text{Na}^+}$ using Na_2SO_4 and K_2SO_4.
Substitute $\lambda^0_{\text{K}^+} = \lambda^0_{\text{Na}^+} + 24$ into (2):

$$2(\lambda^0_{\text{Na}^+} + 24) + \lambda^0_{\text{SO}_4^{2-}} = 308$$

$$2\lambda^0_{\text{Na}^+} + 48 + \lambda^0_{\text{SO}_4^{2-}} = 308$$

$$2\lambda^0_{\text{Na}^+} + \lambda^0_{\text{SO}_4^{2-}} = 260 \tag{12}$$

Compare with (1):

$$2\lambda^0_{\text{Na}^+} + \lambda^0_{\text{SO}_4^{2-}} = 260$$

This suggests we need to solve for $\lambda^0_{\text{Na}^+}$ and $\lambda^0_{\text{HCOO}^-}$ directly. Let's try substituting known values. Assume:

$$\lambda^0_{\text{Na}^+} + \lambda^0_{\text{HCOO}^-} = 105 \tag{5}$$

Use (8) in (4):

$$\lambda^0_{\text{H}^+} + (\lambda^0_{\text{HCOO}^-} + 21) = 426$$

$$\lambda^0_{\text{H}^+} + \lambda^0_{\text{HCOO}^-} = 405 \tag{13}$$

Now we have:

$$\Lambda^0_{\text{HCOOH}} = \lambda^0_{\text{H}^+} + \lambda^0_{\text{HCOO}^-} = 405$$

Let's verify by calculating $\lambda^0_{\text{Na}^+}$, $\lambda^0_{\text{K}^+}$, and $\lambda^0_{\text{Cl}^-}$.

Step 3: Verify Calculations

Assume $\lambda^0_{\text{HCOO}^-} = x$, then from (5):

$$\lambda^0_{\text{Na}^+} = 105 - x$$

From (8):

$$\lambda^0_{\text{Cl}^-} = x + 21$$

From (6) and (3):

$$\lambda^0_{\text{K}^+} + \lambda^0_{\text{Cl}^-} = 150$$

$$\lambda^0_{\text{K}^+} = \lambda^0_{\text{Na}^+} + 24 = (105 - x) + 24 = 129 - x$$

Substitute into (3):

$$(129 - x) + (x + 21) = 150$$

$$129 + 21 = 150$$

This confirms consistency. Now use Na_2SO_4:

$$2(105 - x) + \lambda^0_{SO_4^{2-}} = 260$$

$$210 - 2x + \lambda^0_{SO_4^{2-}} = 260$$

$$\lambda^0_{SO_4^{2-}} = 50 + 2x \tag{14}$$

For K_2SO_4:

$$2(129 - x) + (50 + 2x) = 308$$

$$258 - 2x + 50 + 2x = 308$$

$$308 = 308$$

This is consistent. Now find $\lambda^0_{H^+}$:

$$\lambda^0_{H^+} + (x + 21) = 426$$

$$\lambda^0_{H^+} = 405 - x$$

$$\lambda^0_{H^+} + \lambda^0_{HCOO^-} = (405 - x) + x = 405$$

This confirms:

$$\Lambda^0_{HCOOH} = 405\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}$$

Step 4: Final Answer

The molar conductivity at infinite dilution for formic acid is:

$$\boxed{405\,\text{S} \cdot \text{cm}^2 \cdot \text{mol}^{-1}}$$

Quick Tip

The key is to properly combine the given conductivities to isolate the needed ion contributions.

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2. Markovnikov's rule is applicable to which of the following reactions?

(a) Addition of HBr to propene

(b) Addition of HBr to propene in the presence of peroxides

(c) Addition of Br to ethene

(d) Hydroboration-oxidation of alkenes

Correct Answer: (a) Addition of HBr to propene

Solution:

Step 1: Markovnikov's Rule

Markovnikov's rule states that in the electrophilic addition of HX to an unsymmetrical alkene, the hydrogen attaches to the carbon with more hydrogens, and the halogen to the carbon with fewer hydrogens, forming the more stable carbocation.

Step 2: Evaluate Options

Option (a): HBr to propene

Propene ($CH_3-CH=CH_2$) reacts with HBr:

$$CH_3-CH=CH_2 + HBr \rightarrow CH_3-CHBr-CH_3$$

H^+ adds to the CH_2 carbon (more hydrogens), and Br^- to the CH carbon, following Markovnikov's rule.

Result: Applicable.

Option (b): HBr to propene with peroxides

With peroxides, HBr addition to propene ($CH_3-CH=CH_2$) is free radical, yielding anti-Markovnikov product:

$$CH_3-CH=CH_2 \rightarrow CH_3-CH_2-CH_2Br$$

Br adds to the CH_2 carbon, opposite to Markovnikov's rule.

Result: Not applicable.

Option (c): Br_2 to ethene

Ethene ($CH_2=CH_2$) is symmetrical, and Br_2 addition forms:

$$CH_2=CH_2 + Br_2 \rightarrow CH_2Br-CH_2Br$$

No regioselectivity is needed, so Markovnikov's rule does not apply.

Result: Not applicable.

Option (d): Hydroboration-oxidation

Hydroboration-oxidation of propene ($CH_3-CH=CH_2$) gives:

$$CH_3-CH=CH_2 \xrightarrow{BH_3,H_2O_2,OH^-} CH_3-CH_2-CH_2OH$$

Boron adds to the less substituted carbon, yielding anti-Markovnikov addition.

Result: Not applicable.

Step 3: Final Answer

Only option (a) follows Markovnikov's rule.

$$\boxed{\text{(a)}}$$

Quick Tip

Remember: "The rich get richer" - hydrogen adds to the carbon with more hydrogens.

3. A current of 2 A passes through a coil of 100 turns, producing a magnetic flux of 5 × 10 Wb per turn. What is the magnetic energy associated with the coil?

(a) 5 $\times 10^{-3}$ J

(b) 6 $\times 10^{-3}$ J

(c) 5 $\times 10^{-6}$ J

(d) 7 $\times 10^{-3}$ J

Correct Answer: (a) 5 $\times 10^{-3}$ J

Solution:

Step 1: Understand the Magnetic Energy Formula

The magnetic energy stored in an inductor (or coil) is given by:

$$U = \frac{1}{2} L I^2$$

where L is the inductance of the coil (in henries, H), and I is the current (in amperes, A). To find U, we need to calculate L.

Step 2: Calculate the Inductance L

The inductance of a coil is related to the magnetic flux linkage by:

$$\Phi_{\text{total}} = N\Phi = LI$$

where: - N is the number of turns, - Φ is the magnetic flux per turn, - I is the current.
Rearranging for L:

$$L = \frac{N\Phi}{I}$$

Given: - $N = 100$ turns, - $\Phi = 5 \times 10^{-5}$ Wb per turn, - $I = 2$ A.
Substitute the values:

$$L = \frac{100 \times 5 \times 10^{-5}}{2}$$

$$L = \frac{100 \times 5 \times 10^{-5}}{2} = \frac{5 \times 10^{-3}}{2} = 2.5 \times 10^{-3}\,\text{H}$$

$$L = 2.5\,\text{mH}$$

Step 3: Calculate the Magnetic Energy U

Now, use the magnetic energy formula:

$$U = \frac{1}{2}LI^2$$

Substitute $L = 2.5 \times 10^{-3}\,\text{H}$ and $I = 2\,\text{A}$:

$$U = \frac{1}{2} \times (2.5 \times 10^{-3}) \times (2)^2$$

$$U = \frac{1}{2} \times 2.5 \times 10^{-3} \times 4$$

$$U = \frac{1}{2} \times 10 \times 10^{-3} = 5 \times 10^{-3}\,\text{J}$$

$$U = 5\,\text{mJ}$$

Step 4: Final Answer

The magnetic energy associated with the coil is:

$$\boxed{5 \times 10^{-3}\,\text{J}}$$

Quick Tip

Magnetic energy depends on both the current and the coil's inductance.

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4. Calculate the Reynolds number for a liquid with density 1 g/cm³ and viscosity 8 × 10 Pa·s, flowing at 0.5 m/s through a pipe of diameter 4 cm.

(a) 40,000

(b) 25,000

(c) 30,000

(d) 28,000

Correct Answer: (b) 25,000

Solution:

Step 1: Understand the Reynolds Number Formula

The Reynolds number (Re) for flow through a pipe is given by:

$$Re = \frac{\rho v D}{\mu}$$

where: - ρ is the density of the fluid, - v is the velocity of the flow, - D is the diameter of the pipe, - μ is the dynamic viscosity.

Step 2: Convert Units to SI

Given: - Density: $\rho = 1\,\text{g/cm}^3$, - Viscosity: $\mu = 8 \times 10^{-4}\,\text{Pa·s}$, - Velocity: $v = 0.5\,\text{m/s}$, - Diameter: $D = 4\,\text{cm}$.
Convert to SI units: - $\rho = 1\,\text{g/cm}^3 = 1 \times \frac{1000\,\text{kg}}{1\,\text{m}^3} = 1000\,\text{kg/m}^3$, -
$\mu = 8 \times 10^{-4}\,\text{Pa·s} = 8 \times 10^{-4}\,\text{kg/(m·s)}$ (already in SI), - $D = 4\,\text{cm} = 0.04\,\text{m}$, - $v = 0.5\,\text{m/s}$ (already in SI).

Step 3: Calculate the Reynolds Number

Substitute the values into the formula:

$$Re = \frac{\rho v D}{\mu}$$

$$Re = \frac{(1000) \times (0.5) \times (0.04)}{8 \times 10^{-4}}$$

$$Re = \frac{1000 \times 0.5 \times 0.04}{8 \times 10^{-4}} = \frac{20}{8 \times 10^{-4}}$$

$$Re = \frac{20}{0.0008} = 25000$$

Step 4: Final Answer

The Reynolds number is:

$$\boxed{25000}$$

Quick Tip

Reynolds number determines flow regime: ¡2000 laminar, ¿4000 turbulent.

5. A box contains 5 red balls and 7 blue balls. Two balls are drawn at random without replacement. What is the probability that both balls are red?

(a) $\frac{11}{33}$

(b) $\frac{10}{35}$

(c) $\frac{12}{33}$

(d) $\frac{5}{33}$

Correct Answer: (d) $\frac{5}{33}$

Solution:

Step 1: Understand the Problem

We need to find the probability of drawing two red balls in succession without replacement. The total number of balls is $5 + 7 = 12$. Since the draws are without replacement, the probability of the second draw depends on the first.

Step 2: Calculate the Probability

The probability that both balls are red is the product of: - The probability that the first ball is red. - The probability that the second ball is red, given the first is red.

- **First draw**: There are 5 red balls out of 12 total balls.

$$P(\text{first red}) = \frac{5}{12}$$

- **Second draw**: After drawing one red ball, 4 red balls and 11 total balls remain.

$$P(\text{second red} \mid \text{first red}) = \frac{4}{11}$$

The joint probability is:

$$P(\text{both red}) = P(\text{first red}) \times P(\text{second red} \mid \text{first red})$$

$$P(\text{both red}) = \frac{5}{12} \times \frac{4}{11}$$

$$P(\text{both red}) = \frac{5 \times 4}{12 \times 11} = \frac{20}{132}$$

Simplify the fraction:

$$\frac{20 \div 4}{132 \div 4} = \frac{5}{33}$$

Step 3: Final Answer

The probability that both balls are red is:

$$\boxed{\frac{5}{33}}$$

Quick Tip

For ”without replacement” problems, probabilities change after each draw.

6. If ’APPLE’ is written as ’ELPPA’, how is ’ORANGE’ written in that language?

(a) EGNAGO

(b) FGNARO

(c) EGNARO

(d) EGGARO

Correct Answer: (c) EGNARO

Solution:

Step 1: Identify the Pattern

The word 'APPLE' is written as 'ELPPA'. Notice that 'ELPPA' is the reverse of 'APPLE':
- 'APPLE' has letters: A, P, P, L, E. - 'ELPPA' has letters: E, L, P, P, A.
This indicates that the transformation involves reversing the order of the letters in the word.

Step 2: Apply the Pattern to 'ORANGE'

The word 'ORANGE' has the letters: O, R, A, N, G, E.
Reversing the order:
- Original: O, R, A, N, G, E. - Reversed: E, G, N, A, R, O.
Thus, 'ORANGE' becomes 'EGNARO'.

Step 3: Final Answer

The word 'ORANGE' is written as:

$$\boxed{\text{EGNARO}}$$

Quick Tip

For letter rearrangement problems, look for reversal, alphabetical shifts, or pattern-based rearrangements.

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7. A company's sales increased by 20% in 2022 compared to 2021 and by 25% in 2023 compared to 2022. If the sales in 2021 were 10 lakhs, what were the sales in 2023?

(a) 15 lakhs
(b) 18 lakhs
(c) 20 lakhs
(d) 25 lakhs

Correct Answer: (a) 15 lakhs

Solution:

Step 1: Understand the Growth

The sales increase by 20% from 2021 to 2022, and by 25% from 2022 to 2023. The initial sales in 2021 are 10 lakhs. We need to apply these percentage increases sequentially.

Step 2: Calculate Sales in 2022

A 20% increase means the 2022 sales are 120% of the 2021 sales:

$$\text{Sales}_{2022} = \text{Sales}_{2021} \times (1 + 0.20)$$

Given $\text{Sales}_{2021} = 10\,\text{lakhs}$:

$$\text{Sales}_{2022} = 10 \times 1.20 = 12\,\text{lakhs}$$

Step 3: Calculate Sales in 2023

A 25% increase from 2022 to 2023 means the 2023 sales are 125% of the 2022 sales:

$$\text{Sales}_{2023} = \text{Sales}_{2022} \times (1 + 0.25)$$

$$\text{Sales}_{2023} = 12 \times 1.25$$

$$1.25 = \frac{5}{4}, \quad \text{so} \quad 12 \times \frac{5}{4} = \frac{12 \times 5}{4} = \frac{60}{4} = 15$$

$$\text{Sales}_{2023} = 15\,\text{lakhs}$$

Step 4: Alternative Method (Compound Growth)

The total growth factor over the two years is:

$$(1 + 0.20) \times (1 + 0.25) = 1.20 \times 1.25$$

$$1.20 \times 1.25 = 1.20 \times \frac{5}{4} = \frac{6}{4} = 1.5$$

$$\text{Sales}_{2023} = \text{Sales}_{2021} \times 1.5 = 10 \times 1.5 = 15\,\text{lakhs}$$

This confirms the result.

Step 5: Final Answer

The sales in 2023 are:

$$\boxed{15\,\text{lakhs}}$$

Quick Tip

For successive percentage changes, multiply the factors sequentially.

8. Choose the word most similar in meaning to 'Ubiquitous':

(a) Rare

(b) Omnipresent

(c) Unique

(d) Obsolete

Correct Answer: (b) Omnipresent

Solution:

Step 1: Define 'Ubiquitous'

The word 'ubiquitous' means being present everywhere at the same time or being very common and found in many places.

Step 2: Evaluate Options

(a) **Rare**: Means uncommon or seldom found, which is the opposite of ubiquitous.

(b) **Omnipresent**: Means present everywhere at the same time, closely matching the meaning of ubiquitous.

(c) **Unique**: Means one of a kind or unlike anything else, unrelated to being widespread.

(d) **Obsolete**: Means outdated or no longer in use, unrelated to ubiquity.

Step 3: Select the Best Match

'Omnipresent' is the most similar in meaning to 'ubiquitous' as both describe something that is present everywhere or very common.

Step 4: Final Answer

$$\boxed{\text{(b)}}$$

Quick Tip

"Ubiquitous" comes from Latin "ubique" meaning "everywhere".

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9. Identify the grammatically correct sentence:

(a) She don't like to play tennis.
(b) He doesn't likes to read books.
(c) They doesn't go to school on Sundays.
(d) He doesn't like to read books.

Correct Answer: (d) He doesn't like to read books.

Step 1: Evaluate Each Option

(a) **She don't like to play tennis.**
"She" is singular third-person, so it requires "doesn't." "Don't" is incorrect. Should be: "She doesn't like to play tennis." **Incorrect.**

(b) **He doesn't likes to read books.**

”He” is singular third-person, so ”doesn’t” is correct, but the verb should be ”like” (base form), not ”likes.” Should be: ”He doesn’t like to read books.” **Incorrect.**

(c) **They doesn’t go to school on Sundays.**
”They” is plural, so it requires ”don’t,” not ”doesn’t.” Should be: ”They don’t go to school on Sundays.” **Incorrect.**

(d) **He doesn’t like to read books.**
”He” is singular third-person, so ”doesn’t” is correct, and ”like” is the correct base verb form. This sentence is grammatically correct. **Correct.**

Step 2: Final Answer

The grammatically correct sentence is:

$$\boxed{\text{(d)}}$$

Quick Tip

With auxiliary ”do/does”, always use the base form of the main verb.
