

The 86 most repeated JEE Main Chemistry questions

Ranked by how many shifts asked the same question, or the same pattern with new numbers, from 2020 to 2026. With answer key.

86

QUESTIONS

11×

MOST ASKED

113

SHIFTS COVERED

Asked in	Questions in this PDF
8 or more shifts	1 Q1
5 to 7 shifts	5 Q2 to Q6
4 shifts	11 Q7 to Q17
3 shifts	7 Q18 to Q24
2 shifts	62 Q25 to Q86

- 1 Start at Q1: the patterns asked in the most shifts come first. Each question lists every shift that asked it.
- 2 Attempt each one on paper, then check yourself against the answer key at the end.
- 3 Got one wrong? Tap "Step-by-step solution" at the top right of it for the full working, where available.

How we ranked these

We grouped questions matched as near-identical or the same pattern with new numbers into patterns, and counted the shifts that asked each one. These are past repeats only: they say nothing about which questions a future paper will ask.

prepwisar.in/jee-main/repeated-questions/ · the method, the data and the other PDFs

Answers follow NTA's final answer keys. Typing errors are possible, so check doubtful answers against the official key. Spotted a mistake? prepwisar.in/feedback · Terms: prepwisar.in/terms

Asked in 8 or more shifts · 1 PYQ

Q1 Purification & Characterisation of Organic Compounds Asked 11×

[Step-by-step solution](#) › [prepwisar.in/questions/4zRGcXW6R1](https://www.prepwisar.in/questions/4zRGcXW6R1)

Asked 11 times: 6 Sep 2020 S1, 20 Jul 2021 S2, 27 Jul 2021 S1, 27 Aug 2021 S1, 27 Jun 2022 S2, 28 Jun 2022 S1, 27 Jul 2022 S1, 13 Apr 2023 S2, 22 Jan 2025 S1, 24 Jan 2025 S2, **23 Jan 2026 S2 (printed)**

In Carius method 0.2425 g of an organic compound gave 0.5253 g silver chloride. The percentage of chlorine in the organic compound is

- (A) 87.65% (B) 53.58% (C) 37.57% (D) 34.79%

Asked in 5 to 7 shifts · 5 PYQs

Q2 Purification & Characterisation of Organic Compounds Asked 7× NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/U35W1W6w2o](https://www.prepwisar.in/questions/U35W1W6w2o)

Asked 7 times: 26 Aug 2021 S2, 25 Jan 2023 S1, 23 Jan 2025 S1, 29 Jan 2025 S2, 21 Jan 2026 S1, 28 Jan 2026 S2, **4 Apr 2026 S2 (printed)**

In sulphur estimation, 2.0×10^{-3} mol of an organic compound (X) (molar mass 76 g mol^{-1}) gave 0.4813 g of barium sulphate (molar mass 233 g mol^{-1}). The percentage of sulphur in the compound (X) is $\text{---} \times 10^{-1}\%$ (Nearest integer)

Q3 Purification & Characterisation of Organic Compounds Asked 6× NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/XXmWPd6J8o](https://www.prepwisar.in/questions/XXmWPd6J8o)

Asked 6 times: 16 Mar 2021 S2, 2 Apr 2025 S2, 3 Apr 2025 S2, 4 Apr 2025 S1, 7 Apr 2025 S2, **24 Jan 2026 S1 (printed)**

In Dumas method for estimation of nitrogen, 0.50 g of an organic compound gave 70 mL of nitrogen collected at 300 K and 715 mm pressure. The percentage of nitrogen in the organic compound is $\text{---}\%$.

(Aqueous tension at 300 K is 15 mm).

Q4 Atomic Structure Asked 5×

[Step-by-step solution](#) › [prepwisar.in/questions/I9owiCaxIV](https://www.prepwisar.in/questions/I9owiCaxIV)

Asked 5 times: 27 Jul 2022 S2, 29 Jul 2022 S2, 31 Jan 2023 S2, 9 Apr 2024 S1, **5 Apr 2026 S1 (printed)**

Arrange the following atomic orbitals of multi electron atoms in order of increasing energy.

- A. $n = 3, l = 2, m = +1$
B. $n = 4, l = 0, m = 0$
C. $n = 6, l = 1, m = 0$
D. $n = 5, l = 1, m = +1$
E. $n = 2, l = 1, m = +1$

Choose the correct answer from the options given below:

- (A) $C < D < B < A < E$ (B) $B < A < E < C < D$
(C) $E < C < D < B < A$ (D) $E < B < A < D < C$

Q5 Purification & Characterisation of Organic Compounds Asked 5× [Step-by-step solution](#) › [prepwisar.in/questions/LoaHJQ0L2k](https://www.prepwisar.in/questions/LoaHJQ0L2k)

Asked 5 times: 25 Jul 2021 S2, 29 Jun 2022 S1, 25 Jul 2022 S1, 1 Feb 2024 S2, **22 Jan 2026 S2 (printed)**

When 1 g of compound (X) is subjected to Kjeldahl's method for estimation of nitrogen, 15 mL 1 M H_2SO_4 was neutralized by ammonia evolved. The percentage of nitrogen in compound (X) is:

- (A) 0.21 (B) 21 (C) 42 (D) 0.42

Q6 Chemical Kinetics **Asked 5×** **NUMERICAL**

[Step-by-step solution](#) > prepwiser.in/questions/YJhC2IqjbM

Asked 5 times: 31 Aug 2021 S1, 24 Jun 2022 S2, 28 Jun 2022 S1, 27 Jan 2024 S2, **6 Apr 2024 S1 (printed)**

Time required for 99.9% completion of a first order reaction is _____ times the time required for completion of 90% reaction.(nearest integer)

Asked in 4 shifts · 11 PYQs

Q7 Mole Concept & Stoichiometry **Asked 4×** **NUMERICAL**

[Step-by-step solution](#) > prepwiser.in/questions/Lw8JF3MVRl

Asked 4 times: 9 Jan 2020 S1, 26 Jun 2022 S1, 29 Jan 2024 S1, **28 Jan 2025 S1 (printed)**

The molarity of a 70% (mass/mass) aqueous solution of a monobasic acid (X) is _____ $\times 10^{-1}$ M (Nearest integer)

[Given: Density of aqueous solution of (X) is 1.25g mL^{-1}

Molar mass of the acid is 70g mol^{-1}]

Q8 Atomic Structure **Asked 4×**

[Step-by-step solution](#) > prepwiser.in/questions/nIJB4AfZ5C

Asked 4 times: 9 Jan 2020 S1, 6 Apr 2023 S2, 4 Apr 2024 S1, **29 Jan 2025 S1 (printed)**

If a_0 is denoted as the Bohr radius of hydrogen atom, then what is the de-Broglie wavelength (λ) of the electron present in the second orbit of hydrogen atom? [n : any integer]

(A) $\frac{8\pi a_0}{n}$

(B) $\frac{2a_0}{n\pi}$

(C) $\frac{na_0}{4\pi}$

(D) $\frac{4\pi a_0}{n}$

Q9 Solutions & Colligative Properties **Asked 4×**

[Step-by-step solution](#) > prepwiser.in/questions/TP0YFEBRAJ

Asked 4 times: 1 Feb 2023 S1, 29 Jan 2024 S2, 6 Apr 2024 S2, **22 Jan 2025 S2 (printed)**

Density of 3 M NaCl solution is 1.25g/mL . The molality of the solution is:

(A) 2.79 m

(B) 2 m

(C) 1.79 m

(D) 3 m

Q10 Purification & Characterisation of Organic Compounds **Asked 4×**

[Step-by-step solution](#) > prepwiser.in/questions/JgSN9QDu8K

Asked 4 times: 25 Feb 2021 S1, 28 Jun 2022 S2, 28 Jul 2022 S1, **8 Apr 2025 S2 (printed)**

On combustion 0.210 g of an organic compound containing C, H and O gave 0.127 g H_2O and 0.307 g CO_2 . The percentages of hydrogen and oxygen in the given organic compound respectively are:

(A) 7.55, 43.85

(B) 6.72, 53.41

(C) 6.72, 39.87

(D) 53.41, 39.6

Q11 Purification & Characterisation of Organic Compounds **Asked 4×** **NUMERICAL**

[Step-by-step solution](#) > prepwiser.in/questions/6UnDcnGVtT

Asked 4 times: 26 Jun 2022 S1, 31 Jan 2023 S1, 3 Apr 2025 S1, **7 Apr 2025 S1 (printed)**

An organic compound weighing 500 mg, produced 220 mg of CO_2 , on complete combustion. The percentage composition of carbon in the compound is _____ %. (nearest integer)

(Given molar mass in g mol^{-1} of C : 12, O : 16)

Q12 Chemical Equilibrium **Asked 4×** **NUMERICAL**

[Step-by-step solution](#) > prepwiser.in/questions/s_O0ol5OS9

Asked 4 times: 6 Sep 2020 S1, 22 Jul 2021 S2, 31 Jan 2023 S1, **29 Jan 2024 S1 (printed)**

For the reaction $\text{N}_2\text{O}_{4(g)} \rightleftharpoons 2\text{NO}_{2(g)}$, $K_p = 0.492\text{atm}$ at 300K. K_c for the reaction at same temperature is _____ $\times 10^{-2}$.

(Given: $R = 0.082\text{Latmmol}^{-1}\text{K}^{-1}$)

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Q13 Solutions & Colligative Properties **Asked 4×** NUMERICAL [Step-by-step solution](#) › prepwiser.in/questions/pKkOyrZXB1

Asked 4 times: 26 Aug 2021 S2, 27 Aug 2021 S2, 28 Jul 2022 S1, **1 Feb 2024 S2 (printed)**

Mass of ethylene glycol (antifreeze) to be added to 18.6kg of water to protect the freezing point at -24°C is _____ kg (Molar mass in g mol^{-1} for ethylene glycol 62, K_f of water = 1.86K kg mol^{-1})

Q14 Solutions & Colligative Properties **Asked 4×** NUMERICAL [Step-by-step solution](#) › prepwiser.in/questions/tjRNrXypAb

Asked 4 times: 20 Jul 2021 S1, 20 Jul 2021 S2, 28 Jun 2022 S1, **9 Apr 2024 S2 (printed)**

The vapor pressure of pure benzene and methyl benzene at 27°C is given as 80 Torr and 24 Torr, respectively. The mole fraction of methyl benzene in vapor phase, in equilibrium with an equimolar mixture of those two liquids (ideal solution) at the same temperature is _____ $\times 10^{-2}$ (nearest integer)

Q15 Mole Concept & Stoichiometry **Asked 4×** [Step-by-step solution](#) › prepwiser.in/questions/pFbGx9hWua

Asked 4 times: 26 Jun 2022 S2, 27 Jan 2024 S1, 31 Jan 2024 S1, **5 Apr 2024 S2 (printed)**

The number of moles of methane required to produce $11\text{g CO}_2(\text{g})$ after complete combustion is : (Given molar mass of methane in g mol^{-1} : 16)

- (A) 0.35 (B) 0.25 (C) 0.5 (D) 0.75

Q16 Surface Chemistry **Asked 4×** NUMERICAL [Step-by-step solution](#) › prepwiser.in/questions/HemEnuhWjZ

Asked 4 times: 2 Sep 2020 S1, 6 Sep 2020 S2, 27 Jun 2022 S2, **30 Jan 2023 S2 (printed)**

The graph of $\log \frac{x}{m}$ vs $\log p$ for an adsorption process is a straight line inclined at an angle of 45° with intercept equal to 0.6020. The mass of gas adsorbed per unit mass of adsorbent at the pressure of 0.4atm is _____ $\times 10^{-1}$ (Nearest integer).

Given: $\log 2 = 0.3010$

Q17 Solid State **Asked 4×** NUMERICAL [Step-by-step solution](#) › prepwiser.in/questions/ZuminP7DpE

Asked 4 times: 5 Sep 2020 S1, 30 Jun 2022 S1, 28 Jul 2022 S1, **28 Jul 2022 S2 (printed)**

Metal M crystallizes into a fcc lattice with the edge length of $4.0 \times 10^{-8}\text{cm}$. The atomic mass of the metal is _____ g/mol. (Nearest integer)

(Use: $N_A = 6.02 \times 10^{23}\text{mol}^{-1}$, density of metal, $M = 9.03\text{g cm}^{-3}$)

Asked in 3 shifts · 7 PYQs

Q18 Carbohydrates & Biomolecules **Asked 3×** [Step-by-step solution](#) › prepwiser.in/questions/E8koalvKkg

Asked 3 times: 1 Feb 2024 S2, 2 Apr 2025 S2, **24 Jan 2026 S2 (printed)**

The number of possible tripeptides formed involving alanine (ala), glycine (gly) and valine (val), where no amino acid has been used more than once is:

- (A) 8 (B) 3 (C) 4 (D) 6

Q19 Coordination Compounds **Asked 3×** [Step-by-step solution](#) › prepwiser.in/questions/sTnGspaNa3

Asked 3 times: 8 Jan 2020 S1, 11 Apr 2023 S1, **23 Jan 2025 S1 (printed)**

The complex that shows Facial - Meridional isomerism is:

- (A) $[\text{Co}(\text{en})_2\text{Cl}_2]^+$ (B) $[\text{Co}(\text{NH}_3)_3\text{Cl}_3]$ (C) $[\text{Co}(\text{NH}_3)_4\text{Cl}_2]^+$ (D) $[\text{Co}(\text{en})_3]^{3+}$

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Q20 Atomic Structure **Asked 3×**[Step-by-step solution](#) > prepwiser.in/questions/hCcTU6OTksAsked 3 times: 8 Jan 2020 S2, 29 Jan 2023 S2, **22 Jan 2025 S1 (printed)**

Radius of the first excited state of Helium ion is given as: $a_0 \rightarrow$ radius of first stationary state of hydrogen atom.

- (A) $r = \frac{a_0}{4}$ (B) $r = 2a_0$ (C) $r = 4a_0$ (D) $r = \frac{a_0}{2}$

Q21 Purification & Characterisation of Organic Compounds **Asked 3×**[Step-by-step solution](#) > prepwiser.in/questions/WwnaOk8TMOAsked 3 times: 31 Jan 2024 S1, 2 Apr 2025 S2, **4 Apr 2025 S2 (printed)**

Match List - I with List - II

	List - I (Separation of)		List - II (Separation Technique)
(A)	Aniline from aniline-water mixture	(I)	Simple distillation
(B)	Glycerol from spent-lye in soap industry	(II)	Fractional distillation
(C)	Different fractions of crude oil in petroleum industry	(III)	Distillation at reduced pressure
(D)	Chloroform-Aniline mixture	(IV)	Steam distillation

Choose the correct answer from the options given below:

- (A) (A)-(IV), (B)-(III), (C)-(II), (D)-(I) (B) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
(C) (A)-(III), (B)-(IV), (C)-(I), (D)-(II) (D) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)

Q22 Solid State **Asked 3×**[Step-by-step solution](#) > prepwiser.in/questions/jS46InxKKsAsked 3 times: 18 Mar 2021 S1, 24 Jun 2022 S1, **6 Apr 2023 S1 (printed)**

A compound is formed by two elements X and Y. The element Y forms cubic close packed arrangement and those of element X occupy one third of the tetrahedral voids. What is the formula of the compound?

- (A) XY_3 (B) X_3Y_2 (C) X_3Y (D) X_2Y_3

Q23 Electrochemistry **Asked 3×** **NUMERICAL**[Step-by-step solution](#) > prepwiser.in/questions/l6buQSU39wAsked 3 times: 25 Jan 2023 S1, 25 Jan 2023 S2, **30 Jan 2023 S1 (printed)**

Consider the cell



When the potential of the cell is 0.712V at 298K, the ratio $[\text{Fe}^{2+}] / [\text{Fe}^{3+}]$ is _____. (Nearest integer)

Given:



$$\frac{2.303RT}{F} = 0.06\text{V}$$

Q24 Solutions & Colligative Properties **Asked 3×** **NUMERICAL**[Step-by-step solution](#) > prepwiser.in/questions/XLse3VXSmiAsked 3 times: 25 Jul 2021 S1, 24 Jun 2022 S2, **29 Jul 2022 S1 (printed)**

If O_2 gas is bubbled through water at 303K, the number of millimoles of O_2 gas that dissolve in 1 litre of water is _____. (Nearest Integer)

(Given : Henry's Law constant for O_2 at 303K is 46.82 k bar and partial pressure of $\text{O}_2 = 0.920$ bar)

(Assume solubility of O_2 in water is too small, nearly negligible)

Q25 Chemical Thermodynamics **Asked 2×** NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/XY2KXtT9mG](https://www.prepwisar.in/questions/XY2KXtT9mG)

Asked 2 times: 17 Mar 2021 S1, 8 Apr 2026 S2 (printed)

Consider the reaction



The magnitude of enthalpy change for the reaction in kJmol^{-1} is _____. (Nearest integer)

Given :

$$\Delta_f H^\ominus(\text{H}_2\text{S}) = -20.1\text{kJmol}^{-1}$$

$$\Delta_f H^\ominus(\text{H}_2\text{O}) = -286.0\text{kJmol}^{-1}$$

$$\Delta_f H^\ominus(\text{SO}_2) = -297.0\text{kJmol}^{-1}$$

Q26 Chemical Kinetics **Asked 2×** NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/22VY9Yazwn](https://www.prepwisar.in/questions/22VY9Yazwn)

Asked 2 times: 29 Jun 2022 S2, 6 Apr 2026 S2 (printed)

Decomposition of a hydrocarbon follows the equation $k = (5.5 \times 10^{11} \text{s}^{-1}) e^{\frac{-28000\text{K}}{T}}$. The activation energy of reaction is _____ kJmol^{-1} . (Nearest Integer)

Given: $R = 8.3\text{JK}^{-1}\text{mol}^{-1}$

Q27 Solutions & Colligative Properties **Asked 2×** NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/WMIfo7SWx](https://www.prepwisar.in/questions/WMIfo7SWx)

Asked 2 times: 4 Sep 2020 S1, 23 Jan 2026 S2 (printed)

Two liquids A and B form an ideal solution. At 320 K, the vapour pressure of the solution, containing 3 mol of A and 1 mol of B is 500 mm Hg. At the same temperature, if 1 mol of A is further added to this solution, vapour pressure of the solution increases by 20 mm Hg. Vapour pressure (in mm Hg) of B in pure state is _____. (Nearest integer)

Q28 Chemical Kinetics **Asked 2×**

[Step-by-step solution](#) › [prepwisar.in/questions/5LLok0mL-f](https://www.prepwisar.in/questions/5LLok0mL-f)

Asked 2 times: 8 Apr 2025 S2, 28 Jan 2026 S1 (printed)

An organic compound undergoes first order decomposition. The time taken for decomposition to $(\frac{1}{8})^{\text{th}}$ and $(\frac{1}{10})^{\text{th}}$ of its initial concentration are $t_{1/8}$ and $t_{1/10}$ respectively.

What is the value of $\frac{t_{1/8}}{t_{1/10}} \times 10$?

($\log 2 = 0.3$)

(A) 30

(B) 9

(C) 3

(D) 0.9

Q29 Atomic Structure **Asked 2×**

[Step-by-step solution](#) › [prepwisar.in/questions/IZGC6Et90h](https://www.prepwisar.in/questions/IZGC6Et90h)

Asked 2 times: 29 Jan 2023 S1, 6 Apr 2026 S1 (printed)

If shortest wavelength of hydrogen atom in Lyman series is x , then longest wavelength in Balmer series of He^+ is:

(A) $\frac{9x}{5}$

(B) $\frac{36x}{5}$

(C) $\frac{x}{4}$

(D) $\frac{5x}{9}$

Q30 Chemical Kinetics **Asked 2×** NUMERICAL

[Step-by-step solution](#) › [prepwisar.in/questions/68xHVpajIE](https://www.prepwisar.in/questions/68xHVpajIE)

Asked 2 times: 31 Aug 2021 S2, 22 Jan 2026 S2 (printed)

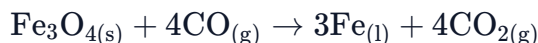
Consider $A \xrightarrow{k_1} B$ and $C \xrightarrow{k_2} D$ are two reactions. If the rate constant (k_1) of the $A \rightarrow B$ reaction can be expressed by the following equation $\log_{10} k = 14.34 - \frac{1.5 \times 10^4}{T/K}$ and activation energy of $C \rightarrow D$ reaction (E_{a2}) is $\frac{1}{5}$ th of the $A \rightarrow B$ reaction (E_{a1}), then the value of (E_{a2}) is _____ kJmol^{-1} . (Nearest Integer)

Asked 2 times: 26 Jun 2022 S2, 28 Jan 2025 S2 (printed)

The spin only magnetic moment (μ) value (B.M.) of the compound with strongest oxidising power among Mn_2O_3 , TiO and VO is _____ B.M. (Nearest integer).

Asked 2 times: 29 Jun 2022 S1, 24 Jan 2025 S1 (printed)

Consider the following reaction occurring in the blast furnace:



' x ' kg of iron is produced when $2.32 \times 10^3 \text{ kg Fe}_3\text{O}_4$ and $2.8 \times 10^2 \text{ kg CO}$ are brought together in the furnace. The value of ' x ' is _____. (nearest integer)

{Given: molar mass of $\text{Fe}_3\text{O}_4 = 232 \text{ g mol}^{-1}$

molar mass of $\text{CO} = 28 \text{ g mol}^{-1}$

molar mass of $\text{Fe} = 56 \text{ g mol}^{-1}$ }

Asked 2 times: 28 Jun 2022 S2, 24 Jan 2025 S2 (printed)

The elemental composition of a compound is 54.2% C, 9.2% H and 36.6% O. If the molar mass of the compound is 132 g mol^{-1} , the molecular formula of the compound is : [Given : The relative atomic mass of C : H : O = 12 : 1 : 16]

(A) $\text{C}_4\text{H}_8\text{O}_2$ (B) $\text{C}_6\text{H}_{12}\text{O}_6$ (C) $\text{C}_4\text{H}_9\text{O}_3$ (D) $\text{C}_6\text{H}_{12}\text{O}_3$

Asked 2 times: 8 Jan 2020 S1, 4 Apr 2025 S1 (printed)

Fortification of food with iron is done using $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$. The mass in grams of the $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ required to achieve 12 ppm of iron in 150 kg of wheat is _____ (Nearest integer)

[Given: Molar mass of Fe, S and O respectively are 56, 32 and 16 g mol^{-1}]

Asked 2 times: 26 Feb 2021 S2, 28 Jan 2025 S1 (printed)

The formation enthalpies, $\Delta H_f^\ominus$ for $\text{H}_{(g)}$ and $\text{O}_{(g)}$ are 220.0 and $250.0 \text{ kJ mol}^{-1}$, respectively, at 298.15 K , and $\Delta H_f^\ominus$ for $\text{H}_2\text{O}_{(g)}$ is $-242.0 \text{ kJ mol}^{-1}$ at the same temperature. The average bond enthalpy of the O – H bond in water at 298.15 K is _____ kJ mol^{-1} (nearest integer).

Asked 2 times: 10 Apr 2023 S1, 23 Jan 2025 S1 (printed)



In the above diagram, the standard electrode potentials are given in volts (over the arrow).

The value of $E_{\text{FeO}_4^{2-}/\text{Fe}^{2+}}$ is:

(A) 1.2 V

(B) 2.1 V

(C) 1.4 V

(D) 1.7 V

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Q37 Chemical Thermodynamics **Asked 2×**[Step-by-step solution](#) > [prepwiser.in/questions/x1LHBaYo1n](#)Asked 2 times: 5 Sep 2020 S2, **7 Apr 2025 S2 (printed)**

The hydration energies of K^+ and Cl^- are $-x$ and $-y$ kJ/mol respectively. If the lattice energy of KCl is $-z$ kJ/mol, then the heat of solution of KCl is:

- (A) $x + y + z$ (B) $z - (x + y)$ (C) $-z - (x + y)$ (D) $x - y - z$

Q38 Chemical Thermodynamics **Asked 2×** **NUMERICAL**[Step-by-step solution](#) > [prepwiser.in/questions/eea_6RT_1z](#)Asked 2 times: 6 Apr 2023 S2, **28 Jan 2025 S2 (printed)**

Consider the following data:

Heat of formation of $CO_2(g) = -393.5 \text{ kJ mol}^{-1}$

Heat of formation of $H_2O(l) = -286.0 \text{ kJ mol}^{-1}$

Heat of combustion of benzene $= -3267.0 \text{ kJ mol}^{-1}$

The heat of formation of benzene is _____ kJ mol^{-1} . (Nearest integer)

Q39 Ionic Equilibrium **Asked 2×** **NUMERICAL**[Step-by-step solution](#) > [prepwiser.in/questions/Jr8bzytwaf](#)Asked 2 times: 25 Jan 2023 S1, **7 Apr 2025 S2 (printed)**

One litre buffer solution was prepared by adding 0.10 mol each of NH_3 and NH_4Cl in deionised water. The change in pH on addition of 0.05 mol of HCl to the above solution is _____ $\times 10^{-2}$.

(Nearest integer)

Given: pK_b of $NH_3 = 4.745$ and $\log_{10} 3 = 0.477$

Q40 Chemical Bonding & Molecular Structure **Asked 2×**[Step-by-step solution](#) > [prepwiser.in/questions/md7oXLfS1Y](#)Asked 2 times: 29 Jan 2025 S1, **29 Jan 2025 S2 (printed)**

Total number of sigma (σ) _____ and pi (π) _____ bonds respectively present in hex-1-en-4-yne are:

- (A) 14 and 3 (B) 11 and 3 (C) 13 and 3 (D) 3 and 13

Q41 Chemical Equilibrium **Asked 2×**[Step-by-step solution](#) > [prepwiser.in/questions/fzjaVZjFSU](#)Asked 2 times: 24 Jun 2022 S1, **31 Jan 2024 S2 (printed)**

$A_{(g)} \rightleftharpoons B_{(g)} + \frac{C}{2}_{(g)}$ The correct relationship between K_P , α and equilibrium pressure P is

- (A) $K_P = \frac{\alpha^{1/2} P^{3/2}}{(2+\alpha)^{3/2}}$ (B) $K_P = \frac{\alpha^{3/2} P^{1/2}}{(2+\alpha)^{1/2}(1-\alpha)}$ (C) $K_P = \frac{\alpha^{1/2} P^{1/2}}{(2+\alpha)^{3/2}}$ (D) $K_P = \frac{\alpha^{1/2} P^{1/2}}{(2+\alpha)^{1/2}}$

Q42 Atomic Structure **Asked 2×** **NUMERICAL**[Step-by-step solution](#) > [prepwiser.in/questions/Lpjfhvv1g8](#)Asked 2 times: 16 Mar 2021 S2, **4 Apr 2024 S2 (printed)**

The maximum number of orbitals which can be identified with $n = 4$ and $m_l = 0$ is _____.

Q43 Electrochemistry **Asked 2×** **NUMERICAL**[Step-by-step solution](#) > [prepwiser.in/questions/_6gEAw4y6_](#)Asked 2 times: 6 Apr 2023 S2, **9 Apr 2024 S1 (printed)**

The standard reduction potentials at 298K for the following half cells are given below:



Consider the given electrochemical reactions,

The number of metal(s) which will be oxidized by $Cr_2O_7^{2-}$, in aqueous solution is _____.

Asked 2 times: 24 Feb 2021 S2, 6 Apr 2024 S2 (printed)

Match List I with List II.

	LIST I Alkali Metal		LIST II Emission Wavelength in nm
A.	Li	I.	589.2
B.	Na	II.	455.5
C.	Rb	III.	670.8
D.	Cs	IV.	780.0

Choose the correct answer from the options given below:

(A) (A)-(II), (B)-(IV), (C)-(III), (D)-(I)

(B) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

(C) (A)-(I), (B)-(IV), (C)-(III), (D)-(II)

(D) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

Asked 2 times: 11 Apr 2023 S1, 4 Apr 2024 S1 (printed)

The correct order of first ionization enthalpy values of the following elements is:

(A) O

(B) N

(C) Be

(D) F

(E) B

Choose the correct answer from the options given below:

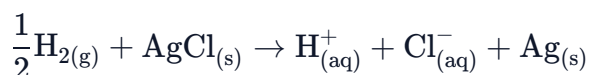
(A) $A < B < D < C < E$ (B) $C < E < A < B < D$ (C) $E < C < A < B < D$ (D) $B < D < C < E < A$

Asked 2 times: 17 Mar 2021 S1, 8 Apr 2024 S2 (printed)

Molality of an aqueous solution of urea is 4.44m. Mole fraction of urea in solution is $x \times 10^{-3}$, Value of x is _____. (Integer answer)

Asked 2 times: 8 Apr 2023 S1, 8 Apr 2024 S2 (printed)

The reaction;



occurs in which of the following galvanic cell:

(A) $\text{Pt} | \text{H}_{2(g)} | \text{HCl}_{(\text{soln.})} | \text{AgNO}_{3(aq)} | \text{Ag}$ (B) $\text{Ag} | \text{AgCl}_{(s)} | \text{KCl}_{(\text{soln.})} | \text{AgNO}_{3(aq.)} | \text{Ag}$ (C) $\text{Pt} | \text{H}_{2(g)} | \text{KCl}_{(\text{soln.})} | \text{AgCl}_{(s)} | \text{Ag}$ (D) $\text{Pt} | \text{H}_{2(g)} | \text{HCl}_{(\text{soln.})} | \text{AgCl}_{(s)} | \text{Ag}$

Asked 2 times: 27 Jul 2021 S1, 27 Jan 2024 S1 (printed)

Sum of bond order of CO and NO^{+} is _____.

Q49 Mole Concept & Stoichiometry **Asked 2×**

[Step-by-step solution](#) › prepwiser.in/questions/Q2Plv2wNwb

Asked 2 times: 24 Feb 2021 S1, **4 Apr 2024 S1 (printed)**

The Molarity (M) of an aqueous solution containing 5.85g of NaCl in 500mL water is : (Given : Molar Mass Na : 23 and Cl : 35.5gmol⁻¹)

(A) 20

(B) 4

(C) 2

(D) 0.2

Q50 Atomic Structure **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/9ckCZ4wdII

Asked 2 times: 25 Feb 2021 S2, **31 Jan 2024 S1 (printed)**

The ionization energy of sodium in kJmol⁻¹, if electromagnetic radiation of wavelength 242nm is just sufficient to ionize sodium atom is _____.

Q51 General Organic Chemistry (GOC) **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/KFrXaN2pEn

Asked 2 times: 29 Jan 2024 S2, **4 Apr 2024 S2 (printed)**

The total number of 'sigma' and 'pi' bonds in 2-oxohex-4-ynoic acid is _____.

Q52 Chemical Thermodynamics **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/s6alCoSa_P

Asked 2 times: 27 Jan 2024 S1, **4 Apr 2024 S2 (printed)**

Three moles of an ideal gas are compressed isothermally from 60L to 20L using constant pressure of 5atm. Heat exchange Q for the compression is - _____ Lit. atm.

Q53 Hydrocarbons: Alkanes **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/K7TSxyKCHh

Asked 2 times: 31 Jan 2024 S2, **1 Feb 2024 S2 (printed)**

Total number of isomeric compounds (including stereoisomers) formed by monochlorination of 2-methylbutane is _____.

Q54 Metallurgy **Asked 2×**

[Step-by-step solution](#) › prepwiser.in/questions/xovb2cRrk4

Asked 2 times: 27 Jul 2021 S2, **30 Jan 2023 S1 (printed)**

In the extraction of copper, its sulphide ore is heated in a reverberatory furnace after mixing with silica to:

(A) remove FeO as FeSiO₃

(B) remove calcium as CaSiO₃

(C) decrease the temperature needed for roasting of Cu₂S

(D) separate CuO as CuSiO₃

Q55 Solutions & Colligative Properties **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/ve3SJvdWCW

Asked 2 times: 27 Jul 2021 S1, **31 Jan 2023 S1 (printed)**

At 27°C, a solution containing 2.5g of solute in 250.0mL of solution exerts an osmotic pressure of 400Pa. The molar mass of the solute is _____ gmol⁻¹ (Nearest integer)
(Given: R = 0.083LbarK⁻¹mol⁻¹)

Q56 Ionic Equilibrium **Asked 2×** **NUMERICAL**

[Step-by-step solution](#) › prepwiser.in/questions/4SIO5Ns4eT

Asked 2 times: 26 Jun 2022 S1, **13 Apr 2023 S2 (printed)**

20 mL of 0.1MNaOH is added to 50mL of 0.1M acetic acid solution. The pH of the resulting solution is _____ × 10⁻² (Nearest integer)

Given: pK_a (CH₃COOH) = 4.76

log 2 = 0.30

log 3 = 0.48

Q57 Electrochemistry **Asked 2×** NUMERICAL

[Step-by-step solution](#) > [prepwiser.in/questions/Ca5nbeV_Qb](https://www.prepwiser.in/questions/Ca5nbeV_Qb)

Asked 2 times: 28 Jun 2022 S2, **11 Apr 2023 S1 (printed)**

In an electrochemical reaction of lead, at standard temperature, if $E^0 (\text{Pb}^{2+}/\text{Pb}) = m$ Volt and $E^0 (\text{Pb}^{4+}/\text{Pb}) = n$ Volt, then the value of $E^0 (\text{Pb}^{2+}/\text{Pb}^{4+})$ is given by $m - xn$. The value of x is _____. (Nearest integer)

Q58 Solutions & Colligative Properties **Asked 2×** NUMERICAL

[Step-by-step solution](#) > [prepwiser.in/questions/-nIAqofUwA](https://www.prepwiser.in/questions/-nIAqofUwA)

Asked 2 times: 27 Jun 2022 S2, **30 Jan 2023 S1 (printed)**

A solution containing 2g of a non-volatile solute in 20g of water boils at 373.52K. The molecular mass of the solute is _____ g mol^{-1} . (Nearest integer)

Given, water boils at 373K, K_b for water = $0.52 \text{ K kg mol}^{-1}$

Q59 Coordination Compounds **Asked 2×**

[Step-by-step solution](#) > [prepwiser.in/questions/_nRbIJNwk4](https://www.prepwiser.in/questions/_nRbIJNwk4)

Asked 2 times: 26 Feb 2021 S2, **13 Apr 2023 S2 (printed)**

The total number of stereoisomers for the complex $[\text{Cr}(\text{ox})_2\text{ClBr}]^{3-}$ (where ox = oxalate) is:

- (A) 1 (B) 3 (C) 2 (D) 4

Q60 Ionic Equilibrium **Asked 2×** NUMERICAL

[Step-by-step solution](#) > [prepwiser.in/questions/owwhGYffNm](https://www.prepwiser.in/questions/owwhGYffNm)

Asked 2 times: 29 Jul 2022 S2, **30 Jan 2023 S1 (printed)**

600mL of 0.01M HCl is mixed with 400mL of 0.01M H_2SO_4 . The pH of the mixture is _____ $\times 10^{-2}$. (Nearest integer)

[Given $\log 2 = 0.30$

$\log 3 = 0.48$

$\log 5 = 0.69$

$\log 7 = 0.84$

$\log 11 = 1.04]$

Q61 Polymers **Asked 2×**

[Step-by-step solution](#) > [prepwiser.in/questions/aBHCcZiWFr](https://www.prepwiser.in/questions/aBHCcZiWFr)

Asked 2 times: 20 Jul 2021 S1, **6 Apr 2023 S1 (printed)**

Polymer used in orlon is:

- (A) Polyethylene (B) Polyacrylonitrile (C) Polycarbonate (D) Polyamide

Q62 Solid State **Asked 2×** NUMERICAL

[Step-by-step solution](#) > [prepwiser.in/questions/GGAIPuP1Kx](https://www.prepwiser.in/questions/GGAIPuP1Kx)

Asked 2 times: 16 Mar 2021 S2, **29 Jan 2023 S2 (printed)**

A metal M forms hexagonal close-packed structure. The total number of voids in 0.02 mol of it is _____ $\times 10^{21}$ (Nearest integer).

(Given $N_A = 6.02 \times 10^{23}$)

Q63 Hydrogen & s-Block Elements **Asked 2×**

[Step-by-step solution](#) > [prepwiser.in/questions/QE_M7SqIDj](https://www.prepwiser.in/questions/QE_M7SqIDj)

Asked 2 times: 29 Jul 2022 S2, **6 Apr 2023 S1 (printed)**

The setting time of Cement is increased by adding:

- (A) Gypsum (B) Limestone (C) Clay (D) Silica

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Q64 Qualitative Analysis: Salt Analysis **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/GISTvKdHjN) > prepwisar.in/questions/GISTvKdHjN

Asked 2 times: 1 Feb 2023 S2, 6 Apr 2023 S2 (printed)

Element not present in Nessler's reagent is:

- (A) I (B) N (C) K (D) Hg

Q65 Mole Concept & Stoichiometry **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/Kyuwg1B_u2) > prepwisar.in/questions/Kyuwg1B_u2

Asked 2 times: 29 Jan 2023 S2, 31 Jan 2023 S2 (printed)

When a hydrocarbon A undergoes complete combustion it requires 11 equivalents of oxygen and produces 4 equivalents of water. What is the molecular formula of A?

- (A) C_9H_8 (B) C_5H_8 (C) $C_{11}H_4$ (D) $C_{11}H_8$

Q66 Redox Reactions **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/XCO8CERYPY) > prepwisar.in/questions/XCO8CERYPY

Asked 2 times: 26 Feb 2021 S2, 27 Jul 2022 S2 (printed)

In neutral or alkaline solution, MnO_4^- oxidises thiosulphate to:

- (A) $S_2O_7^{2-}$ (B) $S_2O_8^{2-}$ (C) SO_3^{2-} (D) SO_4^{2-}

Q67 Metallurgy **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/3ovxZv9rU6) > prepwisar.in/questions/3ovxZv9rU6

Asked 2 times: 27 Aug 2021 S2, 29 Jun 2022 S2 (printed)

Match List I with List II.

	List-I Ore		List-II Composition
(A)	Siderite	(I)	$FeCO_3$
(B)	Malachite	(II)	$CuCO_3 \cdot Cu(OH)_2$
(C)	Sphalerite	(III)	ZnS
(D)	Calamine	(IV)	$ZnCO_3$

Choose the correct answer from the options given below:

- (A) A-I, B-II, C-III, D-IV (B) A-III, B-IV, C-II, D-I (C) A-IV, B-III, C-I, D-II (D) A-I, B-II, C-IV, D-III

Q68 Atomic Structure **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/CK1eOABmHD) > prepwisar.in/questions/CK1eOABmHD

Asked 2 times: 26 Feb 2021 S1, 30 Jun 2022 S1 (printed)

The number of radial nodes and total number of nodes in 4p orbital respectively are:

- (A) 2 and 3 (B) 2 and 2 (C) 3 and 4 (D) 4 and 4

Q69 Hydrogen & s-Block Elements **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/HvKihyYgAY) > prepwisar.in/questions/HvKihyYgAY

Asked 2 times: 20 Jul 2021 S2, 24 Jun 2022 S1 (printed)

The highest industrial consumption of molecular hydrogen is to produce compounds of element:

- (A) Carbon (B) Nitrogen (C) Oxygen (D) Chlorine

Q70 Hydrogen & s-Block Elements **Asked 2×**[Step-by-step solution](https://www.prepwisar.in/questions/-p_GbRJ6Z-) > prepwisar.in/questions/-p_GbRJ6Z-

Asked 2 times: 6 Sep 2020 S2, 25 Jul 2022 S2 (printed)

High purity (> 99.95%) dihydrogen is obtained by:

- (A) reaction of zinc with aqueous alkali.
(B) electrolysis of acidified water using platinum electrodes.
(C) electrolysis of warm aqueous barium hydroxide solution between nickel electrodes.
(D) reaction of zinc with dilute acid.

Asked 2 times: 5 Sep 2020 S1, **26 Jun 2022 S1 (printed)**

A flask is filled with equal moles of A and B. The half lives of A and B are 100 s and 50 s respectively and are independent of the initial concentration. The time required for the concentration of A to be four times that of B is _____ s.

 (Given : $\ln 2 = 0.693$)

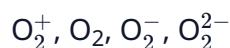
 Asked 2 times: 24 Feb 2021 S1, **28 Jun 2022 S1 (printed)**

Stability of α -Helix structure of proteins depends upon

- (A) dipolar interaction (B) H-bonding interaction
(C) van der Waals forces (D) π -stacking interaction

 Asked 2 times: 25 Jul 2021 S2, **26 Jun 2022 S1 (printed)**

Consider the ions/molecule



For increasing bond order the correct option is:

- (A) $\text{O}_2^{2-} < \text{O}_2^- < \text{O}_2 < \text{O}_2^+$ (B) $\text{O}_2^- < \text{O}_2^{2-} < \text{O}_2 < \text{O}_2^+$ (C) $\text{O}_2^- < \text{O}_2^{2-} < \text{O}_2^+ < \text{O}_2$ (D) $\text{O}_2^- < \text{O}_2^+ < \text{O}_2^{2-} < \text{O}_2$

 Asked 2 times: 27 Aug 2021 S1, **27 Jul 2022 S2 (printed)**

Fe^{3+} cation gives a prussian blue precipitate on addition of potassium ferrocyanide solution due to the formation of:

- (A) $[\text{Fe}(\text{H}_2\text{O})_6]_2 [\text{Fe}(\text{CN})_6]$ (B) $\text{Fe}_2 [\text{Fe}(\text{CN})_6]_2$
(C) $\text{Fe}_3 [\text{Fe}(\text{OH})_2(\text{CN})_4]_2$ (D) $\text{Fe}_4 [\text{Fe}(\text{CN})_6]_3$

 Asked 2 times: 4 Sep 2020 S1, **27 Jun 2022 S2 (printed)**

The correct order of increasing ionic radii is

- (A) $\text{Mg}^{2+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-} < \text{N}^{3-}$ (B) $\text{N}^{3-} < \text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Mg}^{2+}$
(C) $\text{F}^- < \text{Na}^+ < \text{O}^{2-} < \text{Mg}^{2+} < \text{N}^{3-}$ (D) $\text{Na}^+ < \text{F}^- < \text{Mg}^{2+} < \text{O}^{2-} < \text{N}^{3-}$

 Asked 2 times: 17 Mar 2021 S1, **27 Jul 2022 S1 (printed)**

20mL of 0.02 M $\text{K}_2\text{Cr}_2\text{O}_7$ solution is used for the titration of 10mL of Fe^{2+} solution in the acidic medium.

The molarity of Fe^{2+} solution is _____ $\times 10^{-2}$ M. (Nearest Integer)

 Asked 2 times: 1 Sep 2021 S2, **24 Jun 2022 S2 (printed)**

The resistance of a conductivity cell containing 0.01 M KCl solution at 298 K is 1750 Ω . If the conductivity of 0.01 M KCl solution at 298 K is $0.152 \times 10^{-3} \text{ S cm}^{-1}$, then the cell constant of the conductivity cell is _____ $\times 10^{-3} \text{ cm}^{-1}$.

Q78 Chemical Equilibrium **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/Ycj_I421M) > prepwisar.in/questions/Ycj_I421M

Asked 2 times: 24 Jun 2022 S1, **25 Jun 2022 S1 (printed)**

The standard free energy change (ΔG°) for 50% dissociation of N_2O_4 into NO_2 at $27^\circ C$ and 1 atm pressure is $-x \text{ J mol}^{-1}$. The value of x is _____. (Nearest Integer)

[Given : $R = 8.31 \text{ J K}^{-1} \text{ mol}^{-1}$, $\log 1.33 = 0.1239$ $\ln 10 = 2.3$]

Q79 Solutions & Colligative Properties **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/db7SixYJUI) > prepwisar.in/questions/db7SixYJUI

Asked 2 times: 29 Jun 2022 S2, **26 Jul 2022 S2 (printed)**

The elevation in boiling point for 1 molal solution of non-volatile solute A is $3K$. The depression in freezing point for 2 molal solution of A in the same solvent is $6K$. The ratio of K_b and K_f i.e., K_b/K_f is $1 : X$. The value of X is [nearest integer]

Q80 Chemical Kinetics **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/gPGCHuL3V3) > prepwisar.in/questions/gPGCHuL3V3

Asked 2 times: 25 Jun 2022 S2, **25 Jul 2022 S1 (printed)**

The half life for the decomposition of gaseous compound A is 240s when the gaseous pressure was 500 Torr initially. When the pressure was 250 Torr, the half life was found to be 4.0 min. The order of the reaction is _____. (Nearest integer)

Q81 Surface Chemistry **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/YTfo386tWM) > prepwisar.in/questions/YTfo386tWM

Asked 2 times: 24 Jun 2022 S2, **30 Jun 2022 S1 (printed)**

100 mL of 0.3 M acetic acid is shaken with 0.8 g of wood charcoal. The final concentration of acetic acid in the solution after adsorption is 0.125 M. The mass of acetic acid adsorbed per gram of carbon is _____ $\times 10^{-4} \text{ g}$.

(Given : Molar mass of acetic acid = 60 g mol^{-1})

Q82 Electrochemistry **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/6OZpAy4xaC) > prepwisar.in/questions/6OZpAy4xaC

Asked 2 times: 6 Sep 2020 S1, **20 Jul 2021 S2 (printed)**

Potassium chlorate is prepared by electrolysis of KCl in basic solution as shown by following equation.
 $6OH^- + Cl^- \rightarrow ClO_3^- + 3H_2O + 6e^-$

A current of xA has to be passed for 10h to produce 10.0g of potassium chlorate. The value of x is _____. (Nearest integer)

(Molar mass of $KClO_3 = 122.6 \text{ g mol}^{-1}$, $F = 96500 \text{ C}$)

Q83 Chemical Kinetics **Asked 2×** NUMERICAL

[Step-by-step solution](https://www.prepwisar.in/questions/SUL84WqXOq) > prepwisar.in/questions/SUL84WqXOq

Asked 2 times: 20 Jul 2021 S2, **22 Jul 2021 S2 (printed)**



In the above first order reaction the initial concentration of N_2O_5 is $2.40 \times 10^{-2} \text{ mol L}^{-1}$ at 318 K. The concentration of N_2O_5 after 1 hour was $1.60 \times 10^{-2} \text{ mol L}^{-1}$. The rate constant of the reaction at 318 K is _____ $\times 10^{-3} \text{ min}^{-1}$. (Nearest integer)

[Given : $\log 3 = 0.477$, $\log 5 = 0.699$]

Q84 Nuclear & Radiochemistry **Asked 2×**

[Step-by-step solution](https://www.prepwisar.in/questions/9E-DmN3oqq) > prepwisar.in/questions/9E-DmN3oqq

Asked 2 times: 26 Feb 2021 S2, **22 Jul 2021 S2 (printed)**

Isotope(s) of hydrogen which emits low energy β^- particles with $t_{1/2}$ value > 12 years is/are

(A) Protium

(B) Tritium

(C) Deuterium

(D) Deuterium and Tritium

Asked 2 times: 16 Mar 2021 S1, 22 Jul 2021 S2 (printed)

Which one of the following group-15 hydride is the strongest reducing agent?

(A) AsH₃(B) BiH₃(C) PH₃(D) SbH₃

Asked 2 times: 27 Jul 2021 S2, 27 Aug 2021 S1 (printed)

200 mL of 0.2 M HCl is mixed with 300 mL of 0.1 M NaOH. The molar heat of neutralization of this reaction is -57.1 kJ. The increase in temperature in $^{\circ}\text{C}$ of the system on mixing is $x \times 10^{-2}$. The value of x is _____. (Nearest integer)

[Given : Specific heat of water = $4.18 \text{ J g}^{-1} \text{ K}^{-1}$, Density of water = 1.00 g cm^{-3}]

[Assume no volume change on mixing]

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1. B	2. 435	3. 15	4. D	5. C	6. 3	7. 125	8. A
9. A	10. B	11. 12	12. 2	13. 15	14. 23	15. B	16. 16
17. 87	18. D	19. B	20. B	21. A	22. D	23. 10	24. 1
25. 1126	26. 232	27. 200	28. B	29. A	30. 57	31. 5	32. 420
33. D	34. 9	35. 466	36. D	37. B	38. 48	39. 48	40. C
41. B	42. 4	43. 3	44. B	45. C	46. 74	47. D	48. 6
49. D	50. 494	51. 18	52. 200	53. 6	54. A	55. 62250	56. 458
57. 2	58. 100	59. B	60. 186	61. B	62. 36	63. A	64. B
65. A	66. D	67. A	68. A	69. B	70. C	71. 200	72. B
73. A	74. D	75. A	76. 24	77. 266	78. 710	79. 1	80. 1
81. 13125	82. 1	83. 7	84. B	85. B	86. 82		

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