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CLASS 11

Chemistry

Chapterwise Important Questions

9 sections | 36 original questions | 2026-27

Read each chapter, attempt the questions, and support explanations with working or textbook evidence.

Choose a chapter or topic

Chemistry	
Unit 1	Some Basic Concepts of Chemistry
Unit 2	Structure of Atom
Unit 3	Classification of Elements and Periodicity in Properties
Unit 4	Chemical Bonding and Molecular Structure
Unit 5	Thermodynamics
Unit 6	Equilibrium
Unit 7	Redox Reactions
Unit 8	Organic Chemistry – Some Basic Principles and Techniques
Unit 9	Hydrocarbons

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UNIT 1

Some Basic Concepts of Chemistry

Chemistry

1. Find the amount in moles in 11 g of CO_2, using molar mass 44 g/mol.
2. Explain the difference between empirical and molecular formulae.
3. For N_2 + 3H2 -> 2NH3, identify the limiting reactant when 1 mol N_2 reacts with 2 mol H_2.
4. Calculate the molarity when 0.25 mol solute makes 500 mL solution.

UNIT 2

Structure of Atom

Chemistry

1. Explain the photoelectric effect using quantised energy.
2. State the allowed values of quantum numbers for a 3p electron.
3. Write the ground-state electronic configuration of an atom with atomic number 17.
4. Compare an orbit in Bohr's model with an orbital in quantum mechanics.

UNIT 3

Classification of Elements and Periodicity in Properties

Chemistry

1. Explain why atomic radius generally decreases across a period.
2. Compare the first ionisation enthalpies of sodium and magnesium with a reason.
3. How does effective nuclear charge help explain periodic trends?
4. Distinguish electron gain enthalpy from electronegativity.

UNIT 4

Chemical Bonding and Molecular Structure

Chemistry

1. Draw Lewis structures of CO_2 and NH_3.
2. Use VSEPR theory to compare the shapes of BF_3 and NH_3.
3. Explain hydrogen bonding and its influence on water's boiling point.
4. Use molecular orbital theory to explain the paramagnetism of O_2.

UNIT 5

Thermodynamics

Chemistry

1. Distinguish a state function from a path function.
2. A system absorbs 120 J of heat while 40 J of work is done on it. Find delta U using the chemistry sign convention.
3. Explain how Hess's law helps calculate reaction enthalpy.
4. State the condition for spontaneity in terms of Gibbs energy at constant temperature and pressure.

UNIT 6

Equilibrium

Chemistry

1. Write the equilibrium-constant expression for N_2 + 3H2 <=> 2NH3.
2. Predict the effect of increased pressure on that equilibrium at fixed temperature.

3. Calculate the pH of 0.001 mol/L strong monoprotic acid assuming complete dissociation.

4. Explain the common-ion effect using a weak electrolyte.

UNIT 7

Redox Reactions

Chemistry

1. Determine the oxidation number of manganese in $KMnO_4$.

2. Identify the oxidising and reducing agents in $Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu$.

3. Explain why oxidation and reduction must occur together.

4. Balance $MnO_4^- + Fe^{2+} \rightarrow Mn^{2+} + Fe^{3+}$ in acidic medium using the ion-electron method. Show the oxidation and reduction half-equations.

UNIT 8

Organic Chemistry – Some Basic Principles and Techniques

Chemistry

1. Explain homolytic and heterolytic bond cleavage.

2. Compare inductive and resonance effects using suitable molecules.

3. Name CH_3CH_2CHO and identify its functional group.

4. Choose suitable methods to separate, purify and test the purity of an organic solid.

1. Compare electrophilic addition in ethene with substitution in methane.
2. Write the main product when propene reacts with HBr in the absence of peroxide.
3. Explain aromatic stability in benzene.
4. Describe ozonolysis of ethene and state the carbonyl product after reductive work-up.

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