

CLASS 12

CHEMISTRY

MOST IMPORTANT TOPIC 2026



- ✓ HIN & ENG MEDIUM
- ✓ CHAPTERWISE IMP TOPICS
- ✓ RBSE EXAM 2026
- ✓ AROUND 80% PREDICTIONS



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1. MCQ [1.0 Mark] / FIB [0.5 Mark]

- *Units & Physical Constants:*
- *Identification & Examples:*
 - *Identifying types of solutions (Ideal/Non-ideal).*
 - *Identifying types of Ligands (Ambidentate, Didentate).*
 - *Identifying oxidation states in coordination complexes or carbonyls.*
- *Direct Formulas & Relationships:*
 - *Mathematical form of Henry's Law.*
 - *Van't Hoff factor (*i*) for specific salts.*

2. Very Short Answer (VSA) [1 Mark]

- *Definitions: Osmotic Pressure, Molality, Azeotropes, Pseudo-first order reaction, or Lanthanoid contraction.*
- *Electronic Configurations:*
- *Name the Product: Converting Phenol to Benzene, naming the product of the Carbylamine reaction, or identifying the sugar in DNA/RNA.*
- *IUPAC Naming: Simple coordination compounds or organic halides/alcohols.*

3. Short Answer Type (SAT) [1.5 M]

- *Conceptual Reasoning: Why Phenols are more acidic than Alcohols.*
 - *Why transition metals show catalytic properties or form interstitial compounds.*
 - *Why boiling points of alcohols are higher than ethers of similar mass.*
- *Small Derivations & Relations*
 - *Nernst equation application for a single electrode.*
- *Standard Numericals:*
 - *Calculating Molarity, Molality, or Mole Fraction.*
 - *Calculating 'Spin-only' magnetic moments*
- *Comparison: DNA vs RNA,*

4. Long Answer [3 Marks]

- *Detailed Mechanisms: Aldol Condensation or Reimer-Tiemann reaction steps.*
 - *Mechanism of acid-catalyzed dehydration of alcohols to alkenes.*
- *Structure & Bonding (VBT/CFT)*

- *Device Mechanism (Electrochemistry):*
 - *Structure and working of Fuel Cells or the Lead Storage Battery.*

5. Essay Type [4 Marks]

- *Major Derivations: Integrated rate equations for Zero and First-order reactions.*
 - *Deriving the relation for elevation of boiling point or depression of freezing point.*
- *Comprehensive Organic Sequences: A-B-C identification strings where students must identify three intermediate products and the final reagent.*
- *Detailed Laws & Processes: Kohlrausch Law and its applications.*



BOARD
ZONE

1. विलयन (Solutions)

FIB -2

V.SAT -3

SAT-1

Short Answer – 1.5 Marks (लघु उत्तरीय प्रश्न)

- Molarity / Molality Numericals
(मोलरता / मोललता संख्यात्मक)
- Reverse Osmosis (RO) Diagram
(प्रतिलोम परासरण का आरेख)
- Osmotic Pressure Numericals
(परासरण दाब संख्यात्मक)
- Ideal & Non-Ideal Solutions
(आदर्श एवं अनादर्श विलयन)

Very Short Answer – 1 Mark (अति लघु उत्तरीय प्रश्न)

- Osmotic Pressure – Definition
(परासरण दाब की परिभाषा)
- Azeotropic Mixture
(स्थिरक़ाथी मिश्रण)
- Molality – Definition & Formula
(मोललता की परिभाषा एवं सूत्र)
- Van't Hoff Factor (i)
(वान्ट हॉफ़ गुणांक)
- Colligative property

MCQ & Fill in the Blanks – 0.5M

- Henry's Law
(हेनरी का नियम)

- Units of Molarity & Molality
(मोलरता एवं मोललता की इकाइयाँ)
- Freezing Point Depression Constant (K_f) – Unit
(हिमांक अवनमन स्थिरांक की इकाई)
- Positive & Negative Deviation from Raoult's Law
(रॉल्ट के नियम से धनात्मक एवं ऋणात्मक विचलन)

2. वैद्युत रसायन (Electrochemistry)

MCQ- 1

FIB 2

SAT 1 [1.5 MARKS]

LONG ANSWER 1Q [3M]

Long Answer – 3 Marks (दीर्घ उत्तरीय प्रश्न)

- Faraday's Laws of Electrolysis
(फैराडे के विद्युत अपघटन के नियम)
- Molar Conductivity Numericals
(मोलर चालकता संख्यात्मक)
Calculation of molar conductivity (Λ_m) using Conductivity (κ) and Molarity (M)
- Cell & batteries
(ईंधन सेल)
Construction / structure, Working principle
- Labelled diagram
Last asked: 2023

Short Answer – 1.5 Marks (लघु उत्तरीय प्रश्न)

- Cell Diagrams (सेल आरेख)
- Daniell Cell (डैनीयल सेल)
- Nickel–Cadmium Cell (निकेल–कैडमियम सेल)
- Standard Hydrogen Electrode (SHE)
(मानक हाइड्रोजन इलेक्ट्रोड)

- ### MCQ & Fill in the Blanks

- SI Units (SI इकाइयाँ)
 1. Specific Conductance: $S\ m^{-1}$
 2. Conductivity: $S\ m^{-1}$
 3. Resistivity: $\Omega\ m$
- Conductivity Trend
- Equilibrium Constant from Nernst Equation
- Molar conductivity increases as concentration decreases

3. रासायनिक गतिकी (Chemical Kinetics)

EASSY TYPE 1Q [4MARSK]

EASSY TYPE

- Zero Order Reaction – Complete Derivation
(शून्य कोटि अभिक्रिया का व्युत्पन्न)

1. Rate constant equation: $k = \frac{[R]_0 - [R]}{t}$

2. Half-life: $t_{1/2} = \frac{[R]_0}{2k}$

Asked in: 2016, 2018, 2025

- First Order Reaction – Half-life Proofs
(प्रथम कोटि अभिक्रिया अर्ध-आयु प्रमाण)

1. $t_{99.9\%} = 10 \times t_{1/2}$

$$2. \quad t_{75\%} = 2 \times t_{1/2}$$

Asked in: 2018, 2021, 2025

- Order vs Molecularity
(कोटि बनाम आणविकता)
- Temperature Dependence of the Rate of a Reaction-Effect of Catalyst
- Arrhenious equation.

Very Short Answer

- Units of Rate Constant (k)
(वेग स्थिरांक की इकाइयाँ)
 - Zero order: $\text{mol L}^{-1} \text{s}^{-1}$
 - Second order: $\text{L mol}^{-1} \text{s}^{-1}$ (special focus)
Asked in: 2017, 2021, 2025

Pseudo-First Order Reaction (छद्म प्रथम कोटि अभिक्रिया)

- Examples: Ethyl acetate hydrolysis, Cane sugar inversion

MCQ & FIB

- Formula + Example focus
- Integrated Rate Equation (First Order)
 $k = \frac{2.303}{t} \log \frac{[R]_0}{[R]}$ identification
- Factors Influencing Rate of a Reaction

4. डी-ब्लॉक और एफ-ब्लॉक तत्व (D-Block and F-Block Elements)

MCQ-3

VERY SHORT 2

SAT 1

Short Answer

- Magnetic Moment Calculation
(चुंबकीय आघूर्ण की गणना)
 $\mu = \sqrt{n(n+2)}$

Years: [2017 (V^{2+}), 2022 (Cu^{2+}), 2025 (Fe^{2+})]

- Lanthanoid Contraction (लैन्थेनॉइड आकुंचन)
- Actinoids
- General Characteristics
- Catalytic Properties (उत्प्रेरकीय गुण)

Why transition metals act as catalysts

- Trends in the M^{2+}/M Standard Electrode Potentials
- Atomic and Ionic Sizes

B. Very Short Answer (1 Mark - अति लघु उत्तरीय प्रश्न)

- Transition Element Criteria (संक्रमण तत्व की परिभाषा)
Why Zn, Cd, and Hg are not regarded as transition elements
- Electronic Configurations (इलेक्ट्रॉनिक विन्यास)
 $Cr (Z=24): [Ar] 3d^5 4s^1$ | $Gd (Z=64): [Xe] 4f^7 5d^1 6s^2$
- Interstitial Compounds (अंतराकाशी यौगिक)
Reasons for their formation or their characteristics.

C. MCQ

- Color of Ions
Identifying colorless ions (Ti^{4+} , Zn^{2+})
- Magnetic Nature
Identifying Diamagnetic (Cu^+) vs paramagnetic
- Oxidation States
Identifying the metal showing the maximum number of oxidation states (Manganese).

5. समन्वय यौगिक (Coordination Compounds)

MCQ- 2

V SHORT 1

LONG -1Q [3MARKS]

Long Answer

- Valence Bond Theory (VBT) (संयोजकता बंध सिद्धांत)
Hybridization + geometry + magnetic nature:

- Werner's Theory
 1. $[\text{Co}(\text{NH}_3)_6]^{3+}$
 2. $[\text{CoF}_6]^{3-}$
 3. $[\text{Ni}(\text{CN})_4]^{2-}$
- Crystal Field Theory (CFT) (क्रिस्टल क्षेत्र सिद्धांत)
- Isomerism (समावयवता)
- Limitations of Valence Bond Theory

B. Very Short Answer

- IUPAC Naming
(IUPAC नामकरण)
 $\text{K}_3[\text{Fe}(\text{C}_2\text{O}_4)_3]$
 $\text{K}_3[\text{Al}(\text{C}_2\text{O}_4)_3]$
- Ambidentate Ligands (उभयदंती लिगेंड)
 NO_2^- (Nitro/O nitro), SCN^- (Thiocyanato/Isothiocyanato)
- Magnetic Properties of Coordination compounds-

C. MCQ (0.5 Mark - बहुविकल्पीय प्रश्न)

- Oxidation State
Calculating the state of the central metal in carbonyls or oxalato complexes.
- Coordination Number समन्वय बंधों की संख्या
- Ligand Classification

6. हैलोएल्केन और हैलोएरीन (Haloalkanes and Haloarenes)

MCQ-1

VERY SHORT 1Q

SAT 3Q [1.5M]

Short Answer - 1.5 Marks (लघु उत्तरीय प्रश्न)

- S_N1 and S_N2 Mechanisms (क्रियाविधि): Explaining the mechanism, differences, or arranging alkyl halides by reactivity.
- Saytzeff Rule (सेटजेफ नियम): Explanation and elimination reaction in 2-bromopentane.
- Optical Activity & Chirality (प्रकाशिक सक्रियता और कायरलता): Defining terms or explaining why racemic mixtures are inactive.
- Aryl Halide Reactivity: Explaining why aryl halides are less reactive towards nucleophilic substitution.

Very Short Answer

- Markovnikov और Anti-Markovnikov नियम (Markovnikov's and Anti-Markovnikov's Rule)
- Named Reactions (नाम वाली अभिक्रियाएँ): Wurtz, Wurtz-Fittig, Fittig, or Swarts reactions.
- DDT: Full name and structural formula
- Properties of compound

MCQ -

- Hybridization: Identifying the state of carbon bonded to halogen in chlorobenzene (sp^2) or vinyl chloride (sp^2).
- Bond Length: Identifying the compound with the highest C-X bond length (CH_3-I).

7. एल्कोहल, फिनॉल और ईथर (Alcohol, Phenol, and Ethers)

MCQ – 3Q

SAT 1Q

SAT -1Q

Long Answer

- Mechanism of Dehydration (निर्जलीकरण की क्रियाविधि):
Explaining the steps of ethanol to ethene conversion at 443 K.
- Named Reactions (नाम वाली अभिक्रियाएं):
Williamson ether synthesis and Reimer-Tiemann reaction.
- Phenol Preparation (फेनॉल निर्माण):
Converting Cumene, Benzene, or Aniline into Phenol. Years:
- Electrophilic substitution reaction

Short Answer -

- Nomenclature
- Resonating Structures (अनुनादी संरचनाएं):
- Acidity Trends (अम्लता की प्रवृत्ति)
- Boiling Points (कथनांक)
- Physical and Chemical properties (of primary alcohols only)
- Acidic nature of Phenol

MCQ - 0.5 Mark

- By-products (सह-उत्पाद): Identifying 'Acetone' as the by-product in phenol production from cumene. Year:
- Enzymes (एंजाइम): Zymase converts glucose into ethanol. Year: [2024].
- Hybridization (संकरण)

8. एल्डिहाइड, कीटोन और कार्बोक्सिलिक अम्ल (Aldehydes, Ketones, and Carboxylic Acids)

MCQ – 3 MCQ

SAT – 1Q [1.5M]

EASSY TYPE – 1Q

Essay Type - 4 Marks

- Rosenmund Reduction (रोज़ेनमुंड अपचयन)
- Aldol Condensation (ऐल्डोल संघनन)
- Acidity & Resonance (अम्लता और अनुनाद)
- Wolff-Kishner & Clemmensen Reduction
- Mechanism of Nucleophilic addition Reaction
- Physical and Chemical Properties- Uses.

B. Short Answer - 1.5 Marks (लघु उत्तरीय प्रश्न)

- Reactivity Trends (अभिक्रियाशीलता):
Why Aldehydes are more reactive than Ketones toward nucleophilic addition.
- Boiling Points (कथनांक): Why carboxylic acids have higher boiling points than aldehydes/ketones.
- Hell-Volhard-Zelinsky (HVZ) Reaction
- Acidic Nature

MCQ

- Cannizzaro Reaction
- Acidity Order: Comparing FCH_2COOH , ClCH_2COOH , etc.
- IUPAC Naming
- Nature and Structure of Carbonyl Compounds

9. ऐमाइन (Amines)

MCQ – 3Q

FIB – 3Q

VERY SHORT 2Q

Very Short Answer – 1 Mark each

- Hofmann's Bromamide Reaction (होफमान ब्रोमामाइड अभिक्रिया)
- Carbylamine Reaction / Isocyanide Test (कार्बिलऐमीन अभिक्रिया)
- Benzene Diazonium Chloride (बेंजीन डाइऐज़ोनियम क्लोराइड)
- IUPAC Naming of Amines (अमीनों का IUPAC नामकरण)
- परिचय (Introduction) – हाइब्रिडाइजेशन (sp , sp^2 , sp^3) एवं संरचना
- ऐमीन की मूलता (Basic Strength of Amines)
- डाइज़ोनियम लवण के गुण (Properties of Diazonium Salt)
- डाइज़ोनियम लवण के उपयोग (Uses of Diazonium Salt)
- डाइज़ोनियम लवण की अन्य अभिक्रियाएँ (Other Reactions of Diazonium Salt)

MCQ

- Basic Strength of Amines (अमीनों की क्षारीय सामर्थ्य)
- Hybridization
- Classification of Amines

Fill in the Blanks

- Hinsberg's Reagent
- Ammonolysis

SAT 2Q [1.5M]

- Vitamin Deficiencies:
- Sugar Identification:
- Hydrolysis Products:
- Vitamin Solubility:
- Hormones