

■ CHEMISTRY ■



Study Bees Official

Chemistry HSSC-II | Class12

Federal Board (FBISE) | 2026

100% AUTHENTIC GUESS PAPERS

GUESS PAPER #1

GUESS PAPER #2

IMPORTANT CHAPTERS: 2, 5, 6, 7, 8, 9, 11, 17, 18

Electrochemistry

Hydrocarbons

Spectroscopy

Halogenoalkanes

Transition Metals

H₂O

NaCl

CH₄

H₂SO₄

CO₂

C₆H₆

NaOH

HNO₃

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GUESS PAPER #1

IMPORTANT CHAPTERS: 2, 5, 6, 7, 8, 9, 11, 17, 18

CHAPTER 02

Electrochemistry

★ IMPORTANT

- Balancing Redox — Oxidation No. Method & Ion-Electron Method
- Disproportionation Reaction (E-cell)
- Cell Potential & Feasibility of Chemical Reaction
- Galvanic Cell — Concept Assessments: 2.4, 2.5, 2.6
- Standard Hydrogen Electrode (SHE)

Ex: Q.2(ii, iii, xvi, xix), Q.3(vi) | Examples: 2.3, 2.4, 2.5, 2.7

CHAPTER 03

Chemical Equilibria

- Buffer Solutions & Their Applications
- The Partition Co-efficient
- Calculating pH of Buffer Solution

Example 3.2, Concept 3.3 | Ex: Q.2(v, vii), Q.3(v, vi)

CHAPTER 04

Acid-Base Chemistry

- pH Titration Curves

Concept Assessment 4.3 | Ex: Q.2(vi), Q.3(iii)

CHAPTER 05

Group-2 Elements

★ IMPORTANT

- Reaction with O_2 , H_2CO_3 , Acids
- Comparison in Reactivity: Group IA & IIA
- Thermal Decomposition of Carbonates
- Trend in Solubility of Hydroxides

Concept Assessment: 5.1(1, 4, 5) & 5.4(i) | Ex: Q.2(ii, iv)

CHAPTER 06

Transition Elements

★ IMPORTANT

- Electronic Configuration & Melting/Boiling Points (3rd Period)
- Variable Oxidation States
- Complex Compounds — Nomenclature
- Ligands & Geometries of Complexes
- d-d Splitting (Tetrahedral & Octahedral)
- Stability Constant (K_{stab})

Ex: Q.2(i, iv, vi), Q.3(ii, v)

CHAPTER 07

Organic Chemistry

★ IMPORTANT

- Cis-Trans Isomerism (Stability, Definition, Conditions, Dipole Moment)
- Optical Isomerism (Definition, Chiral vs Achiral, Properties)

Ex: Q.2(iii, v, vi)

CHAPTER 08

Hydrocarbons

★ MOST IMPORTANT

- Structure of Benzene
- Resonance and Resonance Energy of Benzene
- Halogenation, Nitration, Alkylation, Acylation Mechanism
- Ortho & Para Directing Groups
- Oxidation Reaction of Alkyl Benzene with Mechanism

Ex: Q.2(ii, iii, iv, vi), Q.3(i, ii)

CHAPTER 09

Halogenoalkanes

★ MOST IMPORTANT

- Reactivity
- SN1 & SN2 Reactions
- E1 & E2 Reactions

Ex: Q.2(iv, vi, viii, ix), Q.3(vi)

CHAPTER 10

Hydroxy Compounds

- Reactions & Preparation of Phenol
- Acidity Comparison: Alcohol, Phenol, Carboxylic Acids & Water

Ex: Q.2(i, iv), Q.3(iv)

CHAPTER 11

Carbonyl Compounds

★ IMPORTANT

- Acidity
- Reactions of Carbonyl Compounds, Acids
- Reactions of Acid Chlorides

Ex: Q.2(vi, vii, ix), Q.3(vii)

CHAPTER 12

Nitrogen Compounds

- Preparation of Amines
- Hydrolysis of Nitriles
- Phenylamine & Azo Compounds
- Reaction of Benzene Diazonium Chloride

Ex: Q.2(iii, viii), Q.3(v, vi)

CHAPTER 13 Polymers

- Addition & Condensation Polymers
- Kevlar, Polyester & Polypeptide

Ex: Q.2(vi,vii,viii,ix), Q.3(iv,v)

CHAPTER 15 Biochemistry

- Carbohydrates— Mono, Oligo & Polysaccharides
- Structure of Proteins
- Enzymes
- DNA vs RNA

Ex: Q.2(v,vii,ix,xi)

CHAPTER 16 Graphical Techniques

- Graphical Techniques and Data of Variables

CHAPTER 17 Qualitative Analysis

★ IMPORTANT

- Determination of Base Peak and Molecular Ion Peak
- Deduction of C-atoms in a Molecule & Cl & Br Detection

Ex: Q.1(v)

CHAPTER 18 Spectroscopy

★ MOST IMPORTANT

- UV-Spectroscopy
- ^1H Proton NMR
- ^{13}C NMR
- Atomic Emission and Absorption

Ex: Q.2(ii,vi,viii)

CHAPTER 19 Chromatography

- Components of Chromatography
- Thin Layer Chromatography (TLC)

Ex: Q.2(i,ii)

CHAPTER 20 Materials

- Extracting Metals from Ores
- Alloying

Ex: Q.2(i,ii,iii,iv)

CHAPTER 22

Agriculture

- Functions of Fertilizers
- Pesticides

Ex: Q.2(i,ix,xii,xv)

CHAPTER 23

Industry

- Important Chemical Processes

Ex: Q.2(ii,iv,v,vi)

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GUESS PAPER #2

IMPORTANT CHAPTERS: 2, 5, 6, 8, 9, 11, 17, 18

CHAPTER 03

Electrochemistry

★ IMPORTANT

- Balancing Redox — Oxidation No. Method Ex Q3 part vi
- Balancing Redox — Ion Electron Method Ex Q2 (xix)
- Galvanic Cell — Examples: 2.6, 2.7, 2.9
- Standard Hydrogen Electrode (SHE) Ex Q2(iii,vi,xvi,xx)
- Feasibility of Chemical Reactions

Ex: Q.2(iii,vi,xvi,xx) | L.Q: Q.3(v,viii)

CHAPTER 03

Chemical Equilibria

- Buffer Solution and Their Applications
- Partition Co-efficient
- Concept Assessment 3.3

Ex: Q.2(vii) | L.Q: Q.3(v,vi)

CHAPTER 04

Acid-Base Chemistry

- pH Titration Curves
- Concept Assessment 4.3

Ex: Q.2(vi) | Q.3(iii)

CHAPTER 05

Group-2 Elements

★ IMPORTANT

- Trends in reactivity with O₂, H₂O, Dilute Acid
- Uses of Group-2 Elements & Compounds
- Trend in Thermal Stability of Carbonates and Nitrates
- Trend in solubility of Group-2 Hydroxides and Sulphates

Ex: Q.2(vi)

CHAPTER 06

Transition Metals

★ IMPORTANT

- Magnetic Properties
- Variable Oxidation States & Catalytic Activity
- Ligands & Types — Colour of Complexes
- Naming of Complex Compounds
- Stability of Complexes & Stability Constant

Ex: Q.2(i,iii) | Q.3(iii,v)

CHAPTER 07

Organic Chemistry

★ IMPORTANT

- Optical Isomerism

Ex: Q.3(i,ii,v)

CHAPTER 08

Hydrocarbons

★ MOST IMPORTANT

- Molecular Orbital Model of Benzene
- Resonance and Resonance Energy of Benzene
- Mechanism of Nitration, Friedel-Craft Reactions
- Ortho-para and Meta Directing Substitutions

Ex: Q.2(ii,iii) | Q.3(vi,viii,ix)

CHAPTER 09

Halogenoalkanes

★ MOST IMPORTANT

- SN1 & SN2 Mechanism
- E1 & E2 Mechanism

Ex: Q.2(iv,vii,ix) | Q.3(iii,iv)

CHAPTER 10

Hydroxy Compounds

- Reactions of Phenol

Ex: Q.2(i,iii)

CHAPTER 11

Carbonyl Compounds

★ IMPORTANT

- Oxidation Reactions
- Comparing Strength: Carboxylic Acid, Phenol & Alcohol
- Reactions of Acyl Chloride

CHAPTER 12

Nitrogen Compounds

- Preparation of amines
- Basicity of amines
- Reaction of Amide

Ex: Q.2(iii,vi) | Q.3(v)

CHAPTER 13

Polymers

- Condensation Polymers

CHAPTER 15

Biochemistry

- Classification of Carbohydrates
- Proteins
- Enzymes
- Difference between DNA & RNA

CHAPTER 16

Empirical Data Collection & Analysis

- Difference between Dependent and Independent Variable

CHAPTER 17

Qualitative Analysis

★ IMPORTANT

- Determination of Molecular Mass by Molecular Ion Peak
- Deduction of Cl and Br in Molecule

Ex: Q.2(v)

CHAPTER 18

Spectroscopy

★ MOST IMPORTANT

- IR Spectroscopy
- Proton NMR & Carbon-13 NMR
- Atomic Emission and Absorption

Ex: Q.2(ii,vii,x,xiii)

CHAPTER 19

Chromatography

- Thin Layer Chromatography (TLC)

Ex: Q.2(i,ii)

CHAPTER 20

Materials

- Extracting Material from Ores and Alloying

CHAPTER 22

Agriculture

- Pesticides
- Acid Rain

CHAPTER 23

Industry

- Important Chemical Processes
- Nail Polish & Lipsticks