

# NEET 2025: 4-Day Chemistry Preparation Checklist

## Preparation Mindset

- ☐ Commit to the #4DaysChallenge
- ☐ Set aside negative feelings about mock test results
- ☐ Create a quiet study environment
- ☐ Plan study sessions with short breaks
- ☐ Focus only on high-yield topics in the syllabus

## Inorganic Chemistry

### Chemical Bonding

- ☐ Hybridization concepts (shapes and structures)
- ☐ Molecular Orbital Theory (MOT)
  - ☐ Bond order calculations
  - ☐ Bond strength and length relationships
  - ☐ Paramagnetic vs diamagnetic character
- ☐ Dipole moment concepts and calculations

### Coordination Chemistry

- ☐ Valence Bond Theory (VBT) concepts
- ☐ Crystal Field Theory (CFT)
  - ☐ Spectrochemical series
  - ☐ CFSE calculations (high spin vs low spin)
- ☐ Magnetic moment calculations
- ☐ Color of complexes (d-d transitions)

### Block Chemistry (P, D, F blocks)

- ☐ P-block trends:
  - ☐ Group 13: Ionization enthalpy and radius
  - ☐ Group 14: Ionization enthalpy and radius
  - ☐ Groups 15-17: Hydride properties
  - ☐ Electron gain enthalpy of Groups 16 & 17
  - ☐ Bond dissociation energy in Group 17
- ☐ Oxidation states (stability patterns)
- ☐ Hydrides (acidity/basicity)
- ☐ Acidity of oxides and oxoacids

- ☐ Phosphorous oxoacids
  - ☐ Sulfur oxoacids
- ☐ D and F Block:
  - ☐  $\text{KMnO}_4$  reactions and products
  - ☐  $\text{K}_2\text{Cr}_2\text{O}_7$  reactions and products
  - ☐ Lanthanoid electronic configurations

## Physical Chemistry

### Thermodynamics

- ☐ First Law ( $\Delta U = q + w$ )
- ☐ Relation between  $\Delta U$  and  $\Delta H$
- ☐ Heat capacity formulas ( $C_{Pm}$  and  $C_{Vm}$ )
- ☐ State and path functions
- ☐ Work done formulas
  - ☐ Isothermal reversible/irreversible
  - ☐ Adiabatic processes
- ☐ Gibbs-Helmholtz equation

### Equilibrium

- ☐ KP-KC relationship
- ☐ Le Chatelier's principle applications
- ☐ Ionic equilibrium concepts
  - ☐ KSP and solubility calculations
  - ☐ Common ion effect on solubility
  - ☐ pH calculations (various solutions)
  - ☐ Buffer solutions

### Atomic Structure

- ☐ Bohr model formulas
  - ☐ Radius and velocity calculations
  - ☐ Total energy formula
  - ☐ Time period and frequency variations
- ☐ Rydberg equation
  - ☐ Lyman and Balmer series
- ☐ Quantum numbers
  - ☐ Values and relationships
  - ☐ Radial nodes formula ( $n-l-1$ )

### Chemical Kinetics

- ☐ Half-life formulas
- ☐ Zero-order reactions
- ☐ First-order reactions

- ☐ Arrhenius equation and graph interpretation

## Solutions

- ☐ Colligative properties
  - ☐ Formulas for all four properties
  - ☐  $i$  and  $\alpha$  relationships
  - ☐  $n$ -values for association/dissociation
- ☐ Ideal and non-ideal solutions
  - ☐ Positive/negative deviations
  - ☐ Azeotrope properties
- ☐ Raoult's law
- ☐ Henry's law

## Electrochemistry

- ☐ Nernst equation
- ☐ Conservation of  $\Delta G$  ( $n_3E_3 = n_2E_2 + n_1E_1$ )
- ☐  $G^\circ$  and  $K$  relationship
- ☐ Conductance formulas
  - ☐ Kohlrausch's law
  - ☐ Conductivity relationships
- ☐ Faraday's laws

## Biomolecules

- ☐ Glycosidic linkages
- ☐ Amino acids
- ☐ DNA formations and structure

## Organic Chemistry

### General Organic Chemistry (GOC)

- ☐ BARHI principles
  - ☐ Bonding concepts
  - ☐ Aromaticity
  - ☐ Resonance
  - ☐ Hyperconjugation
  - ☐ Inductive effect
- ☐ Intermediate stability
- ☐ Geometrical isomerism
- ☐ Stereoisomers ( $2^n$  formula)
- ☐ E/Z configuration
- ☐ R/S configuration
- ☐ Directing effects (ortho/para/meta)

- ☐ Carbocation rearrangements
- ☐ Tautomerism

## **Naming Reactions (Review All)**

- ☐ Aldol condensation
- ☐ Cannizzaro reaction
- ☐ Etard reaction
- ☐ Reimer-Tiemann reaction
- ☐ HVZ reaction
- ☐ Fittig reaction
- ☐ Friedel-Crafts reactions
- ☐ Clemmensen reduction
- ☐ Wolff-Kishner reduction
- ☐ Gabriel phthalimide synthesis
- ☐ Finkelstein reaction
- ☐ Swartz reaction
- ☐ Dow process
- ☐ Cumene process
- ☐ Balz-Schiemann reaction
- ☐ Carbylamine reaction
- ☐ Rosenmund reduction
- ☐ Gatterman reaction
- ☐ Sandmeyer reaction
- ☐ Gatterman-Koch reaction
- ☐ Hoffmann reaction
- ☐ Williamson synthesis

## **Important Reagents & Tests**

- ☐ Hinsberg test
- ☐ Lucas test
- ☐ Tollens' reagent
- ☐ Fehling's solution
- ☐ Iodoform test
- ☐ Nitrous acid reactions
- ☐ Beer's reagent
- ☐ Ozonolysis reactions
- ☐ Grignard reagent reactions

## **Key Reaction Types**

- ☐ Electrophilic substitution reactions
- ☐ KOH reactions (aqueous vs alcoholic)
- ☐ Oxidizing agents (mild vs strong)
- ☐ Reducing agents ( $\text{LiAlH}_4$  vs  $\text{NaBH}_4$ )
- ☐ Ether + HI reaction
- ☐ Carbonyl derivatives formation

- ☐ Dehydrating agent reactions
- ☐ Enolate reactions

## Final Exam Preparation

- ☐ Take one full-length practice test
- ☐ Practice under exam-like conditions
- ☐ Review time management strategy
- ☐ Practice OMR sheet filling
- ☐ Review answering strategy (Bio/Physics/Chemistry order)
- ☐ Review past NEET papers (2022-2024)
- ☐ Utilize study resources (links in description)

## Daily Progress Tracking

- **Day 1** (/ / \_\_\_\_): Topics completed: \_\_\_\_\_
- **Day 2** (/ / \_\_\_\_): Topics completed: \_\_\_\_\_
- **Day 3** (/ / \_\_\_\_): Topics completed: \_\_\_\_\_
- **Day 4** (/ / \_\_\_\_): Topics completed: \_\_\_\_\_

## Priority Topics If Time Is Limited

1. Chemical Bonding - Hybridization
2. Nernst Equation & Electrochemistry basics
3. First Law of Thermodynamics
4. GOC - BARHI principles
5. Key Naming Reactions
6. Colligative Properties
7. Gibbs-Helmholtz equation
8. Half-life and First-order kinetics

Remember: Don't waste time on S-block chemistry (not in syllabus)!

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*After completing the challenge, comment "challenge completed" on the video. All the best for NEET 2025!*