

# JEE Main Chemistry: 100-Day Study Plan

## How the plan works

- **Phase 1 (Days 1-63): Learn.** Every chapter once, with practice and PYQs. A weekly test every Saturday, plus two bigger term tests.
- **Phase 2 (Days 64-84): Revise.** Second pass over all units, sectional tests, error-notebook cleanup.
- **Phase 3 (Days 85-100): Mock phase.** A chemistry mock every alternate day, with analysis and targeted fixes in between.

This assumes you are targeting the late-January session. Check the NTA site for confirmed dates; if your exam is earlier, shorten Phase 2.

## Your daily 3 hours (Phase 1)

| Block       | Time   | What to do                                                                                    |
|-------------|--------|-----------------------------------------------------------------------------------------------|
| 1. Learn    | 60 min | NCERT plus your module or notes for the day's topic. Write short notes or tables as you read. |
| 2. Practice | 60 min | Solved examples first, then 25-30 problems of the topic.                                      |
| 3. PYQs     | 30 min | Previous-year JEE Main questions of that chapter.                                             |

4. Recall 30 min 15 min: recap yesterday's topic from memory. 15 min: update the error notebook and formula/reaction sheet.

**Saturday (weekly test day):** 60 min test (25 questions: 20 MCQ + 5 numerical, matching the usual chemistry section), 60 min analysis, 60 min fixing weak topics and revising the week.

## Ground rules

1. **Error notebook:** every wrong or guessed question goes in with the reason (concept gap, silly mistake, calculation, did not know a fact). Re-read it every weekend.
2. **Physical chemistry:** keep one formula sheet and do numericals daily; accuracy comes from practice.
3. **Inorganic:** read NCERT line by line, including exceptions, colours, oxidation states and tables. Most questions are direct.
4. **Organic:** write mechanisms and reactions by hand, and keep a named-reactions and reagent chart.
5. **Missed a day?** Do not squeeze two days into one. Use Day 62 (buffer) and the Saturday analysis slot to catch up, and push the rest by a day if needed.

## Phase 1: Learn (Days 1-63)

### Week 1 (Oct 11-17)

| Day | Date   | Topic             | Cover                                                                              |
|-----|--------|-------------------|------------------------------------------------------------------------------------|
| 1   | Oct 11 | Basic Concepts I  | Mole concept, molar mass, percentage composition, empirical and molecular formulae |
| 2   | Oct 12 | Basic Concepts II | Stoichiometry, limiting reagent, concentration numericals                          |

|   |           |                         |                                                                    |
|---|-----------|-------------------------|--------------------------------------------------------------------|
| 3 | Oct<br>13 | Atomic<br>Structure I   | EM radiation, photoelectric effect, Bohr model, hydrogen spectrum  |
| 4 | Oct<br>14 | Atomic<br>Structure II  | de Broglie, uncertainty principle, quantum numbers, orbital shapes |
| 5 | Oct<br>15 | Atomic<br>Structure III | Aufbau, Pauli, Hund, electronic configurations, numericals         |
| 6 | Oct<br>16 | Periodicity I           | Modern periodic table, atomic and ionic radii, ionization enthalpy |
| 7 | Oct<br>17 | <b>Weekly Test 1</b>    | Basic Concepts, Atomic Structure, Periodicity so far               |

#### Week 2 (Oct 18-24)

| Day | Date      | Topic                  | Cover                                                                    |
|-----|-----------|------------------------|--------------------------------------------------------------------------|
| 8   | Oct<br>18 | Periodicity II         | Electron gain enthalpy, valence, oxidation states, trends and exceptions |
| 9   | Oct<br>19 | Chemical<br>Bonding I  | Ionic bonding, lattice enthalpy, Fajan's rule, VSEPR shapes              |
| 10  | Oct<br>20 | Chemical<br>Bonding II | Valence bond theory, hybridization (s, p, d), resonance, dipole moment   |

|    |        |                      |                                                                              |
|----|--------|----------------------|------------------------------------------------------------------------------|
| 11 | Oct 21 | Chemical Bonding III | Molecular orbital theory, bond order, magnetic behaviour                     |
| 12 | Oct 22 | Chemical Bonding IV  | Hydrogen bonding, metallic bonding, mixed problems                           |
| 13 | Oct 23 | GOC I                | Tetravalency, hybridization in carbon, functional groups, IUPAC nomenclature |
| 14 | Oct 24 | <b>Weekly Test 2</b> | Periodicity, Bonding, GOC nomenclature                                       |

### Week 3 (Oct 25-31)

| Day | Date   | Topic            | Cover                                                                      |
|-----|--------|------------------|----------------------------------------------------------------------------|
| 15  | Oct 25 | GOC II           | Structural isomerism, stereoisomerism (geometrical and optical)            |
| 16  | Oct 26 | GOC III          | Inductive, electromeric, resonance, hyperconjugation                       |
| 17  | Oct 27 | GOC IV           | Bond fission, carbocation/carbanion/free radical stability, reaction types |
| 18  | Oct 28 | Thermodynamics I | System, state functions, first law, work, heat, enthalpy                   |

|    |           |                        |                                                                       |
|----|-----------|------------------------|-----------------------------------------------------------------------|
| 19 | Oct<br>29 | Thermodynam<br>ics II  | Hess's law, enthalpies of formation,<br>combustion, bond dissociation |
| 20 | Oct<br>30 | Thermodynam<br>ics III | Entropy, Gibbs energy, spontaneity, delta<br>G and K                  |
| 21 | Oct<br>31 | <b>Weekly Test 3</b>   | GOC, Thermodynamics                                                   |

#### Week 4 (Nov 1-7)

| Day | Date     | Topic               | Cover                                                                                    |
|-----|----------|---------------------|------------------------------------------------------------------------------------------|
| 22  | Nov<br>1 | Equilibriu<br>m I   | Physical equilibria, Henry's law, Kc and Kp,<br>reaction quotient                        |
| 23  | Nov<br>2 | Equilibriu<br>m II  | Le Chatelier, effect of<br>temperature/pressure/catalyst, numericals                     |
| 24  | Nov<br>3 | Equilibriu<br>m III | Acid-base concepts, pH, ionization of weak<br>acids and bases, multistage ionization     |
| 25  | Nov<br>4 | Equilibriu<br>m IV  | Buffers, common ion effect, salt hydrolysis,<br>solubility product                       |
| 26  | Nov<br>5 | p-Block I           | Groups 13 and 14: boron and carbon families,<br>anomalous behaviour, important compounds |

|    |          |                          |                                                               |
|----|----------|--------------------------|---------------------------------------------------------------|
| 27 | Nov<br>6 | p-Block II               | Group 15: nitrogen and phosphorus compounds, oxides, oxoacids |
| 28 | Nov<br>7 | <b>Weekly<br/>Test 4</b> | Equilibrium, p-block so far                                   |

### Week 5 (Nov 8-14)

| Day | Date      | Topic            | Cover                                                                               |
|-----|-----------|------------------|-------------------------------------------------------------------------------------|
| 29  | Nov<br>8  | p-Block III      | Groups 16 and 17: oxygen, sulphur, halogens, interhalogens                          |
| 30  | Nov<br>9  | p-Block IV       | Group 18, oxoacids and oxides recap, p-block one-liner sheet                        |
| 31  | Nov<br>10 | Hydrocarbons I   | Alkanes (conformations, halogenation), alkenes (electrophilic addition, ozonolysis) |
| 32  | Nov<br>11 | Hydrocarbons II  | Alkynes, polymerization, Markovnikov and peroxide effect                            |
| 33  | Nov<br>12 | Hydrocarbons III | Benzene, aromaticity, electrophilic substitution, directive influence               |
| 34  | Nov<br>13 | Solutions I      | Concentration terms, Raoult's law, ideal and non-ideal solutions                    |

|    |        |                    |                                                                                   |
|----|--------|--------------------|-----------------------------------------------------------------------------------|
| 35 | Nov 14 | <b>TERM TEST 1</b> | Days 1-34 (all units covered so far). 50 questions, 2 hours, then 1 hour analysis |
|----|--------|--------------------|-----------------------------------------------------------------------------------|

### Week 6 (Nov 15-21)

| Day | Date   | Topic                | Cover                                                                 |
|-----|--------|----------------------|-----------------------------------------------------------------------|
| 36  | Nov 15 | Solutions II         | Colligative properties, van't Hoff factor, molar mass determination   |
| 37  | Nov 16 | Redox I              | Oxidation number, balancing redox reactions                           |
| 38  | Nov 17 | Electrochemistry I   | Galvanic and electrolytic cells, electrode potentials, cell reactions |
| 39  | Nov 18 | Electrochemistry II  | Nernst equation, cell potential and Gibbs energy                      |
| 40  | Nov 19 | Electrochemistry III | Conductance, Kohlrausch's law, batteries and fuel cells, numericals   |
| 41  | Nov 20 | Kinetics I           | Rate law, order and molecularity, integrated rate equations           |
| 42  | Nov 21 | <b>Weekly Test 6</b> | Solutions, Redox/Electrochemistry, Kinetics I                         |

### Week 7 (Nov 22-28)

| Day | Date   | Topic                | Cover                                                                                                 |
|-----|--------|----------------------|-------------------------------------------------------------------------------------------------------|
| 43  | Nov 22 | Kinetics II          | Half-life, Arrhenius equation, activation energy, collision theory                                    |
| 44  | Nov 23 | d- and f-Block I     | Transition element trends, oxidation states, colour, magnetism                                        |
| 45  | Nov 24 | d- and f-Block II    | K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> , KMnO <sub>4</sub> , lanthanoid contraction, actinoids |
| 46  | Nov 25 | Coordination I       | Werner's theory, ligands, denticity, IUPAC nomenclature                                               |
| 47  | Nov 26 | Coordination II      | Isomerism, valence bond approach, hybridization and geometry                                          |
| 48  | Nov 27 | Coordination III     | Crystal field theory, colour, magnetic properties, applications                                       |
| 49  | Nov 28 | <b>Weekly Test 7</b> | Kinetics, d/f-block, Coordination                                                                     |

#### Week 8 (Nov 29-Dec 5)

| Day | Date   | Topic               | Cover                                          |
|-----|--------|---------------------|------------------------------------------------|
| 50  | Nov 29 | Halogen Compounds I | Preparation, properties, C-X bond, SN1 and SN2 |

|    |           |                         |                                                                                    |
|----|-----------|-------------------------|------------------------------------------------------------------------------------|
| 51 | Nov<br>30 | Halogen<br>Compounds II | Stereochemistry of substitution,<br>elimination, chloroform, freons, DDT           |
| 52 | Dec<br>1  | Oxygen<br>Compounds I   | Alcohols: identification, dehydration,<br>preparation and reactions                |
| 53 | Dec<br>2  | Oxygen<br>Compounds II  | Phenols (acidity, Reimer-Tiemann, EAS)<br>and ethers                               |
| 54 | Dec<br>3  | Oxygen<br>Compounds III | Aldehydes and ketones: nucleophilic<br>addition, Grignard, reductions              |
| 55 | Dec<br>4  | Oxygen<br>Compounds IV  | Aldol, Cannizzaro, haloform, distinguishing<br>tests, carboxylic acids and acidity |
| 56 | Dec<br>5  | <b>Weekly Test 8</b>    | Halogen and Oxygen compounds                                                       |

### Week 9 (Dec 6-12)

| Day | Date     | Topic                    | Cover                                                                     |
|-----|----------|--------------------------|---------------------------------------------------------------------------|
| 57  | Dec<br>6 | Nitrogen<br>Compounds I  | Amines: nomenclature, basicity,<br>identification (Hinsberg, carbylamine) |
| 58  | Dec<br>7 | Nitrogen<br>Compounds II | Diazonium salts, synthetic conversions                                    |

|    |           |                                   |                                                                                              |
|----|-----------|-----------------------------------|----------------------------------------------------------------------------------------------|
| 59 | Dec<br>8  | Biomolecules                      | Carbohydrates, amino acids, proteins, vitamins, nucleic acids, hormones                      |
| 60 | Dec<br>9  | Purification and Characterisation | Purification methods, Lassaigne's test, quantitative estimation numericals                   |
| 61 | Dec<br>10 | Practical Chemistry               | Salt analysis (cations and anions), titrations, preparations (Mohr's salt, acetanilide etc.) |
| 62 | Dec<br>11 | <b>Buffer day</b>                 | Catch up anything missed, then do organic conversion practice                                |
| 63 | Dec<br>12 | <b>TERM TEST 2</b>                | Full syllabus, 50 questions, 2 hours, then 1 hour analysis                                   |

## Phase 2: Revise (Days 64-84)

**Daily format (3 hours):** 60 min rapid revision from notes, formula sheet and NCERT; 90 min mixed problems and PYQs of those chapters; 30 min error-notebook review. Every fifth day is a sectional test (about 25-30 questions, timed) followed by analysis.

| Day | Date      | Focus                                        |
|-----|-----------|----------------------------------------------|
| 64  | Dec<br>13 | Physical I: Basic Concepts, Atomic Structure |
| 65  | Dec<br>14 | Physical II: Chemical Bonding, Periodicity   |

|    |           |                                                          |
|----|-----------|----------------------------------------------------------|
| 66 | Dec<br>15 | Physical III: Thermodynamics, Equilibrium (chemical)     |
| 67 | Dec<br>16 | Physical IV: Ionic Equilibrium, Solutions                |
| 68 | Dec<br>17 | Physical V: Electrochemistry, Kinetics                   |
| 69 | Dec<br>18 | <b>Sectional Test: Physical Chemistry</b> + analysis     |
| 70 | Dec<br>19 | Inorganic I: p-block (Groups 13-15)                      |
| 71 | Dec<br>20 | Inorganic II: p-block (Groups 16-18), d- and f-block     |
| 72 | Dec<br>21 | Inorganic III: Coordination compounds, salt analysis     |
| 73 | Dec<br>22 | <b>Sectional Test: Inorganic Chemistry</b> + analysis    |
| 74 | Dec<br>23 | Organic I: GOC, Hydrocarbons                             |
| 75 | Dec<br>24 | Organic II: Halogen compounds, Alcohols, Phenols, Ethers |

- 76 Dec 25 Organic III: Aldehydes, Ketones, Carboxylic acids
- 77 Dec 26 Organic IV: Amines, Biomolecules, Purification, practical principles
- 78 Dec 27 **Sectional Test: Organic Chemistry** + analysis
- 79 Dec 28 Weak-chapter day: pick the 3 lowest-scoring chapters from the sectional tests
- 80 Dec 29 **Part Test 3:** full syllabus, 50 questions, 2 hours
- 81 Dec 30 Analysis of Part Test 3 + fix mistakes
- 82 Dec 31 Inorganic NCERT sprint: tables, exceptions, colours, oxidation states
- 83 Jan 1 Organic sprint: named reactions, reagents, conversions, mechanisms
- 84 Jan 2 Physical sprint: formula sheet and 40 quick numericals across all chapters

### Phase 3: Mock phase (Days 85-100)

**Mock day format:** 60 min chemistry mock under exam conditions (25 questions), 60 min analysis, 60 min revising the topics you missed.

**Between mocks:** targeted revision as listed.

| Day | Date   | Plan                                                                  |
|-----|--------|-----------------------------------------------------------------------|
| 85  | Jan 3  | <b>Mock 1</b>                                                         |
| 86  | Jan 4  | Fix Mock 1 weak topics + PYQs (shift-wise papers)                     |
| 87  | Jan 5  | <b>Mock 2</b>                                                         |
| 88  | Jan 6  | Inorganic one-liners, exceptions, NCERT facts                         |
| 89  | Jan 7  | <b>Mock 3</b>                                                         |
| 90  | Jan 8  | Organic reagents, named reactions, mechanism recap                    |
| 91  | Jan 9  | <b>Mock 4</b>                                                         |
| 92  | Jan 10 | Numerical sprint: 5-question numerical sets across Physical chemistry |
| 93  | Jan 11 | <b>Mock 5</b>                                                         |
| 94  | Jan 12 | Read the full error notebook and formula sheet                        |

|     |        |                                                                                      |
|-----|--------|--------------------------------------------------------------------------------------|
| 95  | Jan 13 | <b>Mock 6</b>                                                                        |
| 96  | Jan 14 | Top 5 weakest chapters: concept recap and 20 questions each                          |
| 97  | Jan 15 | <b>Mock 7</b>                                                                        |
| 98  | Jan 16 | Quick revision: inorganic tables, organic conversions, formulae                      |
| 99  | Jan 17 | <b>Mock 8 (final).</b> Light analysis only; do not start new topics                  |
| 100 | Jan 18 | Light 90-minute recap of flash notes, then rest. Check admit card and exam logistics |

## Score targets and how to use test results

| Stage        | Chemistry target (out of 100) |
|--------------|-------------------------------|
| Weekly tests | 50-60 early on, rising to 65+ |
| Term tests   | 65-70                         |

Phase 3      75+ consistently, 85+ as a stretch  
mocks

- After every test, sort mistakes into three buckets: **concept gap** (go back and relearn), **silly or calculation error** (slow down, check units and signs), **never saw this** (add to notes and revise twice).
- Do not chase attempting everything. In mocks, practise skipping long numericals and coming back after the sure marks.
- Accuracy in Physical numericals and inorganic facts is usually the fastest score gain.

## Resources

- **NCERT Class 11 and 12 Chemistry** is the base, especially for Inorganic. Finish it before extra books.
- **Your coach's or school's module** for chapter-wise problems.
- **Previous-year JEE Main papers** for PYQs and mocks (NTA's official papers and shift-wise sets).
- Pick one problem book per branch if you want extra practice, and avoid switching books midway.

*This plan is a guide: if a chapter takes an extra day, borrow from the buffer on Day 62 or the Saturday catch-up slot, and keep Phases 2 and 3 intact.*