



NSEJS 2025

Question-wise Chapter & Concept Analysis

STUDENT GUIDE FOR CLASSES 7, 8 AND 9

BIOLOGY

20 questions

CHEMISTRY

20 questions

PHYSICS

20 questions

PAPER CODE 51 | 60 QUESTIONS | 120 MINUTES | 216 MARKS

A clear learning map: chapter, concept, skill and what to revise for every question

Student name: _____

Class: _____

Date: _____

How to Use This Guide

This report does not repeat the full question or give the answer. It tells you what each question is testing, the main chapter, the important technical idea, and exactly what to revise next.

Important note

The chapter names are a best-fit learning map. Some NSEJS questions join two or more chapters. Read the "Key concepts" line to see the complete idea behind each question.

BIOLOGY

20

Q1-16 and Q49-52

CHEMISTRY

20

Q17-32 and Q53-56

PHYSICS

20

Q33-48 and Q57-60

Paper structure

Section	Questions	How to attempt
A-1	Q1-Q48	Only one option is correct. Choose the best answer.
A-2	Q49-Q60	One, two, three or four options may be correct. Every option must be checked separately.

What the labels mean

Label	Meaning for the student
Recall	A fact, name, date or example must be remembered accurately.
Concept	You must understand why something happens, not only remember a line.
Diagram / Structure	The picture, graph, circuit, body part or molecule carries essential information.
Numerical	Translate the story into equations, keep units and calculate step by step.
Multiple Correct	Judge each option independently. Do not stop after finding one correct statement.

Where the Paper Gives Most Weight

Each subject has exactly 20 questions, but the chapter emphasis is different. The following count is a broad study grouping, not an official syllabus division.

Biology area	Questions	Count
Biodiversity, classification and ecology	1, 2, 3, 6, 8, 10, 11, 12, 16, 52	10
Genetics, cells and human body	4, 5, 49, 50, 51	5
Plant structure and physiology	7, 14, 15	3
Biomolecules and vitamins	9, 13	2

Chemistry area	Questions	Count
Organic chemistry basics	22, 23, 24, 25, 26, 29, 31, 56	8
Mole concept and stoichiometry	17, 18, 19, 27	4
Bonding, atom and periodicity	28, 30, 53, 55	4
Physical, inorganic and applied chemistry	20, 21, 32, 54	4

Physics area	Questions	Count
Motion, force and momentum	33, 34, 35, 41, 43, 45, 48, 57	8
Fluids	40, 42, 46	3
Electricity	38, 39, 60	3
Light and optics	44, 47, 59	3
Magnetism	36, 58	2
Work and power	37	1

Big lesson from this paper

NSEJS does not test three separate school textbooks. It joins school science with higher-level ideas. Strong basics are essential, but students must also learn to read unfamiliar diagrams, use scientific words and connect two chapters in one problem.

BIOLOGY - Question Map 1 of 4

Questions on this page: 1, 2, 3, 4, 5. Main pattern: classification, scientific vocabulary, genetics, ecology and diagram reading.

1 Biodiversity and National Parks

Recall

Key concepts: National parks can be connected with a special plant, animal or natural feature. This question links Simlipal with red silk cotton (simul) trees.

What to revise: Make a small India map and add famous national parks, their states, and one special plant or animal.

2 Microorganisms and Symbiosis

Concept + Recall

Key concepts: Anabaena is a cyanobacterium that lives with the water fern Azolla. The partnership is important because it helps in nitrogen fixation.

What to revise: Learn common partnerships: Azolla-Anabaena, Rhizobium-legume and fungus-alga in lichens.

3 Fungi and Disease

Recall

Key concepts: Claviceps can infect rye grains. Eating infected grains can cause ergot poisoning, historically called St. Anthony's Fire.

What to revise: Prepare a table of useful fungi and harmful fungi, including the disease or product linked with each.

4 DNA and Heredity

Concept

Key concepts: DNA copies by the semiconservative method: each new DNA molecule has one old strand and one newly made strand. The question compares this with the dispersive idea.

What to revise: Draw DNA copying with two colours. Practise Assertion-Reason questions by checking A and R separately first.

5 Human Genome Project

Recall

Key concepts: The question checks the history of the Human Genome Project and the scientists who led or contributed to modern genome research.

What to revise: Learn a short scientist-contribution list instead of memorising names without context.

BIOLOGY - Question Map 2 of 4

Questions on this page: 6, 7, 8, 9, 10. Main pattern: classification, scientific vocabulary, genetics, ecology and diagram reading.

6 Animal Classification - Primates

Recall

Key concepts: Common names can reveal biological or cultural information. The orangutan is linked with the phrase "old man/person of the forest".

What to revise: Revise the main primates - orangutan, gorilla, chimpanzee and gibbon - with one identifying feature each.

7 Plant Water Loss and Transpiration

Experiment + Diagram

Key concepts: A potometer tracks water uptake through the movement of an air bubble. Crassula is a succulent CAM plant whose stomata remain mostly closed during the day, so daytime water loss is very low.

What to revise: Understand what a potometer measures, and compare ordinary plants with CAM plants.

8 Environment and Conservation Days

Matching + Recall

Key concepts: The question matches important environmental days with their dates, such as forests, biodiversity, nature conservation and tigers.

What to revise: Create a one-page calendar of important science and environment days and revise it monthly.

9 Vitamins and Coenzymes

Concept + Recall

Key concepts: Some B-group vitamins become parts of coenzymes. These coenzymes help enzymes carry out oxidation-reduction and other metabolic reactions.

What to revise: Learn each major B vitamin with its coenzyme form or main role, not only its deficiency disease.

10 Animal Kingdom

Classification + Matching

Key concepts: Diagnostic features are matched with animal groups: mesoglea, syncytial epidermis, parapodia, parenchymatous tissue and radula.

What to revise: Make a phylum chart with body plan, symmetry, special organ and one example animal.

BIOLOGY - Question Map 3 of 4

Questions on this page: 11, 12, 13, 14, 15. Main pattern: classification, scientific vocabulary, genetics, ecology and diagram reading.

11 Convergent Evolution

Concept

Key concepts: Unrelated animals may develop structures with the same name and similar function. The organ called a crop occurs in distantly related groups.

What to revise: Understand the difference between analogous structures, homologous structures and convergent evolution.

12 Fishes and Their Scales

Diagram + Classification

Key concepts: The diagram asks students to identify a cartilaginous fish and a bony fish, then connect them with placoid, ctenoid or other scale types.

What to revise: Practise fish diagrams and learn which scale type belongs to which broad fish group.

13 Biomolecules - Polysaccharides

Recall + Concept

Key concepts: The question focuses on nitrogen-containing polysaccharides, especially chitin, and where such materials occur in living organisms.

What to revise: Compare cellulose, starch, glycogen and chitin by building unit, location and function.

14 Plant Patterns and Phyllotaxy

Pattern Recognition

Key concepts: The Fibonacci pattern is seen in many plant arrangements. The question connects this number pattern with the arrangement of leaves.

What to revise: Observe real leaves, pinecones or sunflower heads and look for repeating spiral patterns.

15 Plant Anatomy - Wood

Recall + Diagram

Key concepts: The question distinguishes sapwood (alburnum) from heartwood (duramen) and asks where certain natural dyes are found.

What to revise: Draw a tree-trunk cross-section and label bark, sapwood, heartwood and annual rings.

BIOLOGY - Question Map 4 of 4

Questions on this page: 16, 49, 50, 51, 52. Main pattern: classification, scientific vocabulary, genetics, ecology and diagram reading.

16 Soil Profile and Ecology

Diagram + Matching

Key concepts: A soil-profile diagram is read using O, A, B, C and R horizons. It also uses terms such as solum, duff, podsollic zone, melanisation and eluviation.

What to revise: Draw one soil profile and write one simple feature beside every layer. Learn the technical words through the diagram.

49 Muscle Structure

Multiple Correct + Diagram

Key concepts: The fine structure of a striated muscle is tested: sarcomere, A band, I band, actin, myosin, Z line, H zone and M line.

What to revise: Use a labelled sarcomere diagram. In multiple-correct questions, test every statement independently.

50 Nervous System

Multiple Correct + Concept

Key concepts: The sympathetic and parasympathetic systems often have opposite effects on the pupil, salivation, bladder, bronchi, digestion and glucose use.

What to revise: Make a two-column comparison table: "fight or flight" versus "rest and digest".

51 Genetics - Haemophilia

Multiple Correct + Genetics

Key concepts: Haemophilia is studied as an X-linked recessive trait. The question checks criss-cross inheritance, occurrence in males and females, and the name "royal disease".

What to revise: Practise one simple family-tree cross using X chromosomes and clearly mark carrier and affected individuals.

52 Pollination

Multiple Correct + Recall

Key concepts: Cheiropterophily means pollination by bats. The question tests examples of bat-pollinated and non-bat-pollinated trees.

What to revise: Learn pollination agents together with flower features: wind, insects, birds, bats and water.

CHEMISTRY - Question Map 1 of 4

Questions on this page: 17, 18, 19, 20, 21. Main pattern: mole calculations, organic structure reasoning, bonding and acid-base ideas.

17 Mole Concept and Gas Reactions

Numerical + Stoichiometry

Key concepts: Hydrogen and chlorine react in a fixed volume ratio to form hydrogen chloride. The final gas percentages are used to work backward to the initial mixture.

What to revise: Write the balanced equation first, then use a simple 100-volume box to track what reacted and what remained.

18 Mole Concept and Solution Composition

Numerical

Key concepts: The required mass of sodium ions is converted into the required mass of sodium nitrate using molar-mass ratios.

What to revise: Always separate three steps: total ion mass, mole ratio, and compound mass. Keep units visible.

19 Hydrated Salts

Numerical + Mole Concept

Key concepts: A hydrate has the form $\text{Na}_2\text{CO}_3 \cdot x\text{H}_2\text{O}$. The amount of carbon dioxide formed at STP helps find moles of carbonate and then the value of x .

What to revise: Practise hydrate questions using: total mass = salt mass + water mass.

20 Thermal Decomposition of Salts

Reaction Reasoning

Key concepts: The question compares what happens when ammonium sulfate and ammonium persulfate are heated, especially whether sulfur trioxide is released.

What to revise: Revise common thermal-decomposition reactions and identify products by balancing atoms.

21 States of Matter

Concept + Recall

Key concepts: A substance is solid at 10 C when 10 C lies below its melting point. The question also needs awareness of intermolecular forces and common physical states.

What to revise: Use the rule: below melting point = solid; between melting and boiling points = liquid; above boiling point = gas.

CHEMISTRY - Question Map 2 of 4

Questions on this page: 22, 23, 24, 25, 26. Main pattern: mole calculations, organic structure reasoning, bonding and acid-base ideas.

22 Organic Isomerism - Amines

Counting + Structure

Key concepts: The task is to count all different primary amines with formula $C_5H_{13}N$. Different carbon skeletons and different positions of the NH_2 group must be considered.

What to revise: Draw carbon skeletons first, remove duplicates by symmetry, and only then place the functional group.

23 Organic Bond Strength and Radicals

Structure + Concept

Key concepts: Breaking different C-H bonds forms radicals of different stability. Resonance-stabilised benzylic radicals form more easily, so their C-H bonds are weaker.

What to revise: Remember: more stable radical usually means lower bond dissociation energy of the parent C-H bond.

24 Resonance and Bond Length

Structure + Resonance

Key concepts: The carbonyl $C=O$ bond and the two C-O bonds of an ester do not all have the same bond order. Resonance gives partial double-bond character to one C-O bond.

What to revise: Use the idea: greater bond order means shorter bond length.

25 C-H Bond Energy

Structure + Concept

Key concepts: C-H bond strength depends on hybridisation and on the stability of the radical formed after bond breaking. Aryl, benzylic and ordinary alkyl positions behave differently.

What to revise: Mark every labelled hydrogen, identify its carbon type, then compare the radicals that would form.

26 Acidity of Functional Groups

Structure + Acidity

Key concepts: The molecule contains groups such as sulfonic acid, carboxylic acid, phenol and terminal alkyne. The question asks which acidic hydrogens react with sodium bicarbonate.

What to revise: Arrange common acidic groups by strength and know that bicarbonate reacts only with acids stronger than carbonic acid.

CHEMISTRY - Question Map 3 of 4

Questions on this page: 27, 28, 29, 30, 31. Main pattern: mole calculations, organic structure reasoning, bonding and acid-base ideas.

27 Molecules in a Drop of Water

Numerical

Key concepts: The volume of one drop is found from drops per millilitre. It is then converted to mass, moles and finally number of molecules using Avogadro number.

What to revise: Follow the chain: volume $\rightarrow$ mass $\rightarrow$ moles $\rightarrow$ molecules.

28 Chemical Bonding

Bond Analysis

Key concepts: The question checks whether ionic, covalent and coordinate bonds can all occur in salts or hydrated compounds.

What to revise: For each compound, identify the ions first, then bonds inside the ions, and finally any coordinate bond or hydration link.

29 Alkyl Radicals and Hyperconjugation

Concept

Key concepts: Primary, secondary and tertiary C-H bonds have different bond dissociation energies because the resulting radicals have different stability.

What to revise: Learn the usual stability order of alkyl radicals and connect it with hyperconjugation.

30 Lewis Structure of I_3^-

Lewis Structure

Key concepts: The total valence electrons are counted and placed in the linear triiodide ion. The number of lone pairs follows from the completed Lewis structure.

What to revise: Count electrons carefully, complete octets, check the total charge and then count lone pairs.

31 Free-Radical Halogenation

Structure + Reaction

Key concepts: Different hydrogens are abstracted at different rates. Allylic and more substituted radical positions are favoured because their radicals are more stable.

What to revise: For every labelled hydrogen, draw the radical formed after removal and compare resonance and substitution.

CHEMISTRY - Question Map 4 of 4

Questions on this page: 32, 53, 54, 55, 56. Main pattern: mole calculations, organic structure reasoning, bonding and acid-base ideas.

32 Soaps, Detergents and Hard Water

Applied Chemistry

Key concepts: Calcium and magnesium ions form insoluble scum with ordinary soaps. Synthetic detergents can still form foam in hard water.

What to revise: Compare soap and detergent structures and remember why soap works poorly in hard water.

53 Periodic Table and Electronic Configuration

Multiple Correct + Configuration

Key concepts: Pairs of elements are compared by the number of electrons in the outermost shell. This is not always the same as the total number of valence electrons for transition elements.

What to revise: Write short electronic configurations and circle only the electrons in the highest principal shell.

54 Acids, Bases and pH

Multiple Correct + Concept

Key concepts: The statements involve very dilute HCl and NaOH, water autoionisation, acidic salt hydrolysis of FeCl_3 , and the acid-base behaviour of sodium hypophosphite.

What to revise: At concentrations near 10^{-7} M, do not ignore water. Also revise which ions hydrolyse in water.

55 Hydrogen Spectrum

Multiple Correct + Atomic Structure

Key concepts: Balmer, Paschen, Pfund and Humphreys series are identified by their lower energy level and by the region of the electromagnetic spectrum.

What to revise: Make a series table: final n value, starting n values and spectral region.

56 Acidity of Substituted Benzoic Acids

Multiple Correct + Organic

Key concepts: Groups such as OH, OCH_3 and Cl change acidity through inductive and resonance effects. The position of the group, including the ortho effect, also matters.

What to revise: Decide whether each substituent withdraws or donates electron density, then note its position on the benzene ring.

PHYSICS - Question Map 1 of 4

Questions on this page: 33, 34, 35, 36, 37. Main pattern: model the situation first, then use equations, diagrams and conservation laws.

33 Motion with Acceleration

Numerical + Kinematics

Key concepts: A bus starts accelerating while a student runs at constant speed. "Just catches" means the runner has the minimum possible speed, so the position-time curves meet at the limiting point.

What to revise: Write separate position equations for the bus and student before solving. Draw a quick position-time sketch.

34 Force, Weight and Tension

Numerical + Force

Key concepts: Before the string breaks, the stationary block has tension equal to its weight. After the break, the broken string cannot carry tension.

What to revise: Draw a free-body diagram before and after the string breaks.

35 Rolling Motion and Friction

Concept

Key concepts: The rear wheel is driven by the pedals, while the front wheel is passive. Static friction can therefore act in different directions on the two wheels during acceleration.

What to revise: Do not say "friction always acts backward". First ask which way the contact point would slip without friction.

36 Magnetic Field of Current-Carrying Wires

Diagram + Magnetism

Key concepts: The right-hand thumb rule gives the field direction around each long wire. At a point, the fields from both arms of the hairpin must be added.

What to revise: Mark current direction on each arm, find each field separately, then use superposition.

37 Work, Power and Efficiency

Numerical

Key concepts: Useful power is the rate of gain of gravitational potential energy, mgh/t . Efficiency compares this useful output with the pump rating.

What to revise: Convert kilograms per minute into kilograms per second before using the power formula.

PHYSICS - Question Map 2 of 4

Questions on this page: 38, 39, 40, 41, 42. Main pattern: model the situation first, then use equations, diagrams and conservation laws.

38 Electric Heating and Power

Numerical + Electricity

Key concepts: For the same water and temperature rise, the required heat is fixed. When both parallel filaments are switched on, their powers add and boiling time decreases.

What to revise: Use $P = \text{heat/time}$. Find the power of each filament from the three boiling-time situations.

39 Bulb Ratings and Series Circuits

Circuit Reasoning

Key concepts: Rated power and voltage give bulb resistance through $R = V^2/P$. In series, voltage divides according to resistance, so the two bulbs do not receive equal voltage.

What to revise: Find each resistance, then current, actual voltage and actual power before deciding which bulb may fuse.

40 Fluids in an Accelerating Container

Numerical + Diagram

Key concepts: Horizontal acceleration creates an effective gravity that is tilted. The water surface tilts, and some water spills from a completely full cube.

What to revise: Draw the tilted free surface first. Use $\tan(\theta) = a/g$ and then calculate the wedge-shaped spilled volume.

41 Relative Speed on a Track

Numerical + Relative Motion

Key concepts: The faster athlete gains on the slower athlete at the relative speed. Overtaking occurs after gaining one full track length.

What to revise: Use relative speed for the catch-up time, then calculate how many laps the faster runner completes.

42 Buoyancy and Floating

Concept + Diagram

Key concepts: Every floating object is in vertical equilibrium, so buoyant force equals its weight. Equal-mass objects therefore experience equal buoyant force even if their shapes and densities differ.

What to revise: Separate two ideas: buoyant force depends on weight at floating equilibrium; immersed fraction depends on density.

PHYSICS - Question Map 3 of 4

Questions on this page: 43, 44, 45, 46, 47. Main pattern: model the situation first, then use equations, diagrams and conservation laws.

43 Vertical Motion Under Gravity

Numerical + Kinematics

Key concepts: The same well depth is reached once by a downward throw and once by an upward throw. The two motion equations are combined to find the common initial speed.

What to revise: Write the depth equation for both cases and eliminate the common depth.

44 Convex Lens and Plane Mirror

Diagram + Optics

Key concepts: Parallel rays first converge toward the focal point of the convex lens. The inclined plane mirror changes the direction of this converging beam, so geometry is used to locate the final image.

What to revise: Draw the focal point first, apply the law of reflection, and use the 60-degree geometry carefully.

45 Momentum and Collision

Numerical + Momentum

Key concepts: Two skaters stick together, so the collision is perfectly inelastic. Momentum is conserved but kinetic energy decreases.

What to revise: Find common speed from momentum, then compare initial and final kinetic energies as a percentage.

46 Communicating Vessels

Numerical + Fluids

Key concepts: After the valve opens, the same liquid settles at a common height. Because the vessels have different diameters, their cross-sectional areas must be used in volume conservation.

What to revise: Convert diameter ratio into area ratio before forming the final-height equation.

47 Thin Lenses and Sign Convention

Numerical + Optics

Key concepts: Two object pins lie on opposite sides of a lens and their images overlap. Correct signs in the lens formula are needed to find the focal length and the lens type.

What to revise: Draw the lens, mark positive direction, assign object and image signs, and only then substitute.

PHYSICS - Question Map 4 of 4

Questions on this page: 48, 57, 58, 59, 60. Main pattern: model the situation first, then use equations, diagrams and conservation laws.

48 Relative Motion with Wind

Numerical + Relative Motion

Key concepts: Wind helps the outward journey and opposes the return. The two ground speeds are $5 + v$ and $5 - v$, and their travel times add to the given total.

What to revise: Write the two times separately using $\text{time} = \text{distance}/\text{speed}$, then add them.

57 Man and Trolley - Momentum

Multiple Correct + Momentum

Key concepts: With no external horizontal force, total momentum remains zero. Relative velocity links the man's ground speed with the trolley recoil speed; centre-of-mass ideas give displacement.

What to revise: Write both equations: momentum conservation and relative velocity. Check every option independently.

58 Charged Particle in a Magnetic Field

Multiple Correct + Diagram

Key concepts: A moving charged particle curves because of the magnetic force $q(\mathbf{v} \times \mathbf{B})$. The curve direction depends on the sign of charge and direction of motion; a neutral particle does not curve.

What to revise: Use the right-hand rule for a positive charge, then reverse the force for an electron.

59 Refraction and Apparent Thickness

Multiple Correct + Optics

Key concepts: Observers view a water layer and a glass slab from different media. Apparent thickness depends on the refractive index of the object medium relative to the observer medium.

What to revise: Treat each layer separately, use relative refractive index, and then add the apparent thicknesses.

60 Resistor Ladder Network

Multiple Correct + Circuit

Key concepts: A repeated network of 2-ohm and 3-ohm resistors is reduced from the far end. Equivalent resistance, total power and branch currents are then checked.

What to revise: Start at the rightmost section, simplify one block at a time, and redraw the circuit after every reduction.

Six Skills This Paper Rewards

Skill	What it looks like in this paper	How to practise
1. Scientific recall	National parks, scientists, vitamins, fungi, environmental dates and examples.	Use short tables, flash cards and weekly recall tests.
2. Diagram reading	Potometer, fish scales, soil profile, circuits, optics and particle paths.	Cover the labels and explain the diagram aloud.
3. Structure reading	Organic molecules, acidic groups, radicals and bond lengths.	Mark every functional group and labelled atom before comparing.
4. Mathematical modelling	Bus catch-up, pumps, boiling time, collisions, vessels and wind.	Write "known", "find" and the governing equation before calculation.
5. Linking chapters	Biology plus history, chemistry plus mathematics, physics plus geometry.	After solving, name all chapters used in the question.
6. Option-by-option checking	The 12 multiple-correct questions at the end.	Write T or F beside every option and justify each in one line.

Common mistakes to avoid

Mistake	Better habit
Memorising the answer only	Write the chapter and reason behind the answer.
Skipping the figure	Read every label, direction, unit and scale before looking at options.
Using a formula immediately	First decide what physical or chemical process is happening.
Ignoring units	Convert minutes, millilitres, centimetres and percentages before substitution.
Treating multiple-correct as single-correct	Check all four options, even after finding one correct option.

Teacher tip

After every practice paper, do not only count marks. Make a three-column error log: chapter gap, concept gap and careless mistake. This tells you exactly what to improve.

Preparation Roadmap for Classes 7, 8 and 9

Students in different classes can use the same paper, but they should not begin at the same level. Build the staircase in the correct order.

CLASS 7 - BUILD THE LANGUAGE OF SCIENCE	CLASS 8 - CONNECT IDEAS	CLASS 9 - BUILD THE NSEJS BRIDGE
• Learn scientific words and units. • Observe diagrams and experiments. • Strengthen fractions, ratios and simple algebra. • Cover cells, plants, motion, heat, light, atoms and acids-bases.	• Compare and classify organisms. • Explain force, pressure, sound, light and electricity. • Balance equations and understand atoms-molecules. • Start mixed reasoning and short numerical questions.	• Master Class 9 motion, force, work-energy, atoms-molecules, tissues and diversity. • Add mole concept, bonding, genetics, fluids, optics and magnetism. • Practise assertion-reason, matching and multiple-correct questions.

A useful weekly routine

Day	Task	Time
Monday	Read one chapter and make a one-page summary.	45-60 min
Tuesday	Solve 10 basic questions from the same chapter.	45 min
Wednesday	Practise diagrams, matching or scientific terms.	30-45 min
Thursday	Solve 5 Olympiad bridge questions.	45-60 min
Friday	Review mistakes and re-solve without seeing the solution.	30 min
Saturday	Take a mixed Science quiz.	60 min
Sunday	Revise the week and update the chapter checklist.	30 min

For younger students

A Class 7 or 8 student does not need to solve every advanced question immediately. First understand the chapter name, learn the basic idea and return to the question after building the bridge topic.

My NSEJS Chapter Checklist

Tick a box only when you can explain the topic in your own words and solve at least five questions without help.

BIOLOGY CHECKLIST

Build vocabulary, classification and diagram confidence.

- | | |
|--|--|
| ☐ Biodiversity and national parks | ☐ Vitamins and biomolecules |
| ☐ Microorganisms, fungi and symbiosis | ☐ Plant anatomy and phyllotaxy |
| ☐ Animal Kingdom and fish scales | ☐ Soil profile and ecology |
| ☐ DNA replication and genetics | ☐ Muscle and nervous-system basics |
| ☐ Human Genome Project and scientists | ☐ Pollination types and examples |
| ☐ Plant transpiration and CAM plants | ☐ Multiple-correct biology practice |

CHEMISTRY CHECKLIST

Strengthen calculations, structures and bonding.

- | | |
|--|--|
| ☐ Mole concept and gas stoichiometry | ☐ Radical stability and bond energy |
| ☐ Solution composition and molar mass | ☐ Resonance and bond length |
| ☐ Hydrated salts | ☐ Acidity of functional groups |
| ☐ States of matter | ☐ Soaps, detergents and hard water |
| ☐ Chemical bonding and Lewis structures | ☐ Periodic table and electronic configuration |
| ☐ Organic isomerism and amines | ☐ pH and hydrogen spectrum |

PHYSICS CHECKLIST

Draw the situation, choose the principle, then calculate.

- | | |
|--|---|
| ☐ Motion equations and relative speed | ☐ Equivalent resistance and branch current |
| ☐ Force, tension and friction | ☐ Magnetic field of wires |
| ☐ Work, power and efficiency | ☐ Charged particles in a magnetic field |
| ☐ Momentum and collisions | ☐ Convex lenses and plane mirrors |
| ☐ Fluids, buoyancy and vessels | ☐ Refraction and apparent thickness |
| ☐ Electric heating and bulb circuits | ☐ Multiple-correct physics practice |

My Question Review Sheet

Use this page after attempting the paper or any mock test. A mistake is useful only when you record its cause and solve the question again.

Four useful error types

Concept gap: I did not know the idea. Reading gap: I missed a word, label or condition. Calculation gap: my method was right but arithmetic or units failed. Strategy gap: I chose a long or unsuitable method.

Q.	Subject	What went wrong?	Chapter to revise	Re-solved on

My next three actions

1. _____
2. _____
3. _____

Use this report with the paper

For each question, first identify the chapter using this guide. Then attempt the question, study the detailed solution, and finally write one sentence explaining what new idea you learned.