

Science (PCMB)

PHYSICS (20 Questions)

Unit 1: Mechanics

- Units & Dimensions
- Vectors
- Kinematics
- Laws of Motion
- Work, Energy & Power
- Circular Motion
- Rotational Motion
- Gravitation

Unit 2: Thermal Physics

- Thermal Expansion
- Calorimetry
- Kinetic Theory of Gases
- Thermodynamics
- Heat Transfer

Unit 3: Oscillations & Waves

- Simple Harmonic Motion
- Wave Motion
- Sound Waves
- Doppler Effect

Unit 4: Electricity & Magnetism

- Electrostatics
- Current Electricity
- Capacitors
- Magnetism
- Electromagnetic Induction

- Alternating Current

Unit 5: Optics & Modern Physics

- Ray Optics
 - Wave Optics
 - Optical Instruments
 - Photoelectric Effect
 - Atomic Structure
 - Nuclear Physics
 - Semiconductor Electronics
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CHEMISTRY (20 Questions)

Physical Chemistry

- Mole Concept
- Atomic Structure
- Chemical Bonding
- Thermodynamics
- Chemical Equilibrium
- Ionic Equilibrium
- Electrochemistry
- Chemical Kinetics
- Solutions
- Surface Chemistry

Organic Chemistry

- General Organic Chemistry
- Isomerism
- Hydrocarbons
- Halo Compounds
- Alcohols

- Phenols
- Ethers
- Aldehydes
- Ketones
- Carboxylic Acids
- Amines
- Biomolecules
- Polymers
- Reaction Mechanisms

Inorganic Chemistry

- Periodic Table
 - Chemical Bonding
 - Coordination Compounds
 - d-Block Elements
 - f-Block Elements
 - Metallurgy
 - Qualitative Analysis
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MATHEMATICS (20 Questions)

Algebra

- Sets
- Relations & Functions
- Complex Numbers
- Quadratic Equations
- Matrices
- Determinants
- Sequences & Series
- Binomial Theorem

Calculus

- Limits
- Continuity
- Differentiation
- Applications of Derivatives
- Integration
- Differential Equations

Coordinate Geometry

- Straight Lines
- Circles
- Conic Sections

Vector & 3D Geometry

- Vector Algebra
- Three-Dimensional Geometry

Probability & Statistics

- Probability
- Statistics
- Mathematical Reasoning

BIOLOGY (20 Questions)

Cell Biology

- Cell Structure & Function
- Biomolecules
- Cell Cycle
- Cell Division

Genetics & Molecular Biology

- Mendelian Genetics
- Mutation

- DNA & RNA
- Protein Synthesis
- Gene Expression

Human Physiology

- Digestive System
- Respiratory System
- Circulatory System
- Excretory System
- Nervous System
- Endocrine System

Plant Physiology

- Photosynthesis
- Respiration
- Mineral Nutrition
- Plant Growth Regulators
- Water Transport

Reproduction & Evolution

- Human Reproduction
- Plant Reproduction
- Evolution
- Reproductive Health

Biotechnology & Ecology

- Genetic Engineering
- PCR
- DNA Fingerprinting
- Ecosystem
- Biodiversity
- Environmental Issues

- Human Health & Diseases
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SCIENTIFIC REASONING (Common – 10 Questions)

Scientific Method

- Observation & Hypothesis
- Experimental Design
- Variables & Controls
- Scientific Investigation

Data Interpretation

- Graph Analysis
- Scientific Tables
- Experimental Results
- Error Analysis

Critical Scientific Thinking

- Cause & Effect
- Scientific Inference
- Evidence-Based Conclusions
- Pattern Recognition

Applied Science

- Environmental Applications
- Health & Biotechnology
- Technology Applications

Question Types

- Case Study
- Assertion–Reason
- Statement Based
- Diagram Analysis
- Experimental Analysis

LOGICAL & ANALYTICAL APTITUDE (Common – 10 Questions)

Logical Reasoning

- Analogy
- Classification
- Coding-Decoding
- Number & Letter Series

Analytical Reasoning

- Blood Relations
- Direction Sense
- Seating Arrangement
- Ranking
- Puzzle Solving

Quantitative Aptitude

- Percentage
- Ratio & Proportion
- Average
- Time & Work
- Time, Speed & Distance
- Profit & Loss
- Simple & Compound Interest

Data Interpretation

- Tables
- Bar Graphs
- Pie Charts
- Line Graphs

Critical Thinking

- Logical Arguments

- Assumptions
- Conclusions
- Decision Making
- Problem Solving