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CHAPTER NOTES

NEET 2027 Biology Hot Topics - Chapter-Wise Weightage & Important Topics

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NEET 2027 Biology Hot Topics - Chapter-Wise Weightage & Important Topics

NEET 2027 Biology - Hot Topics Analysis based on 2021–2025 paper trends. Biology is the highest-weight subject in NEET with **360 marks (90 questions)** - half the total exam. It is split equally: **45 questions Botany + 45 questions Zoology**. About 70–80% of Biology questions come from Class 12. These 25 chapters cover 80%+ of the expected paper.

NEET 2027 exam date: expected early May 2027. Total marks: 720. Negative marking: -1 per wrong answer.

Hot Topics Ranked by Weightage (2021–2025)

Molecular Basis of Inheritance - 8.79% weightage (Class 12, Botany)

Key concepts: DNA structure, replication, transcription, translation, genetic code, lac operon, Human Genome Project

Question pattern: Experiments (Meselson-Stahl, Hershey-Chase), central dogma. 6–7 questions.

Biotechnology - Principles and Processes - 6.60% weightage (Class 12, Zoology)

Key concepts: rDNA technology, restriction enzymes, cloning vectors, PCR, gel electrophoresis

Question pattern: Tool identification, process steps, applications. 4–5 questions.

Animal Kingdom - 5.49% weightage (Class 11, Zoology)

Key concepts: Classification, chordates vs non-chordates, phylum characteristics, examples

Question pattern: Phylum-based questions, identifying features. 4–5 questions.

Human Health and Disease - 5.06% weightage (Class 12, Zoology)

Key concepts: Pathogens, immunity, AIDS, cancer, drugs, vaccines

Question pattern: Disease-pathogen matching, immune response. 4–5 questions.

Sexual Reproduction in Flowering Plants - 4.84% weightage (Class 12, Botany)

Key concepts: Pre-fertilization, double fertilization, embryo, endosperm, apomixis, polyembryony

Question pattern: Embryo sac structure, post-fertilization events. 4 questions.

Cell Cycle and Cell Division - 4.84% weightage (Class 11, Botany)

Key concepts: Mitosis, meiosis, phases, significance, checkpoints

Question pattern: Phase identification, chromosome number, comparisons. 4 questions.

Principles of Inheritance and Variation - 4.84% weightage (Class 12, Botany)

Key concepts: Mendel's laws, linkage, sex determination, pedigree, chromosomal disorders

Question pattern: Monohybrid/dihybrid crosses, pedigree analysis. 4 questions.

Human Reproduction - 4.62% weightage (Class 12, Zoology)

Key concepts: Male/female reproductive systems, gametogenesis, menstrual cycle, fertilization, pregnancy

Question pattern: Hormone roles, process sequence. 4 questions.

Biomolecules - 4.40% weightage (Class 11, Zoology)

Key concepts: Carbohydrates, proteins, enzymes, nucleic acids, lipids

Question pattern: Classification, enzyme kinetics, bond types. 4 questions.

Structural Organisation in Animals - 4.18% weightage (Class 11, Zoology)

Key concepts: Tissues, earthworm, cockroach, frog anatomy

Question pattern: Tissue identification, organ systems. 3-4 questions.

Morphology of Flowering Plants - 3.52% weightage (Class 11, Botany)

Key concepts: Root, stem, leaf, inflorescence, flower, fruit, seed, floral diagrams

Question pattern: Aestivation, placentation, family identification. 3 questions.

Ecosystem - 3.5% weightage (Class 12, Botany)

Key concepts: Productivity, decomposition, energy flow, food chain, nutrient cycles

Question pattern: Pyramids of number/biomass/energy, 10% law. 3 questions.

Anatomy of Flowering Plants - 3.30% weightage (Class 11, Botany)

Key concepts: Plant tissues, monocot/dicot anatomy, secondary growth

Question pattern: Tissue identification, vascular bundles. 3 questions.

Cell: The Unit of Life - 3.30% weightage (Class 11, Botany)

Key concepts: Prokaryotic/eukaryotic cells, organelles, cell wall, membrane

Question pattern: Organelle functions, cell type comparisons. 3 questions.

Biotechnology and Its Applications - 3.2% weightage (Class 12, Zoology)

Key concepts: GM crops, Bt cotton, RNAi, gene therapy, molecular diagnostics, insulin production

Question pattern: Application-based questions, transgenic organisms. 2-3 questions.

Biodiversity and Conservation - 3.0% weightage (Class 12, Botany)

Key concepts: Levels of biodiversity, hotspots, IUCN categories, in-situ and ex-situ conservation

Question pattern: Hotspot identification, conservation strategies. 2-3 questions.

Plant Kingdom - 3.0% weightage (Class 11, Botany)

Key concepts: Algae, bryophytes, pteridophytes, gymnosperms, angiosperms - life cycles

Question pattern: Alternation of generations, classification. 2-3 questions.

Photosynthesis in Higher Plants - 2.9% weightage (Class 11, Botany)

Key concepts: Light/dark reactions, C3 vs C4, photorespiration, Calvin cycle

Question pattern: Process-based questions, experiment identification. 2-3 questions.

Evolution - 2.9% weightage (Class 12, Zoology)

Key concepts: Theories, Hardy-Weinberg, human evolution, adaptive radiation

Question pattern: Hardy-Weinberg problems, evidence. 2-3 questions.

Reproductive Health - 2.8% weightage (Class 12, Zoology)

Key concepts: Population, contraceptives, MTP, STIs, infertility, ART

Question pattern: Contraceptive methods, ART procedures. 2 questions.

Microbes in Human Welfare - 2.5% weightage (Class 12, Zoology)

Key concepts: Microbes in food, industry, sewage treatment, biogas, biocontrol

Question pattern: Microbe-product matching. 2 questions.

Organisms and Populations - 2.5% weightage (Class 12, Botany)

Key concepts: Population attributes, growth models, interactions, adaptations

Question pattern: Exponential/logistic growth, interaction types. 2 questions.

Body Fluids and Circulation - 2.4% weightage (Class 11, Zoology)

Key concepts: Blood composition, heart, cardiac cycle, ECG, blood groups, coagulation

Question pattern: ECG interpretation, cardiac output. 2 questions.

Breathing and Exchange of Gases - 2.3% weightage (Class 11, Zoology)

Key concepts: Respiratory system, gas transport, respiratory volumes, disorders

Question pattern: Oxygen dissociation curve, lung volumes. 2 questions.

Plant Growth and Development - 2.2% weightage (Class 11, Botany)

Key concepts: Phytohormones, photoperiodism, vernalisation, growth curves

Question pattern: Hormone-function matching, PGR applications. 2 questions.

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