

MHT CET Biology Syllabus 2025 PDF

Check the detailed MHT CET 2025 Biology Syllabus segregated into Zoology and Botany in the following -

MHT CET Biology Syllabus 2025 for Zoology

Unit 1: Organization of Cell

- Cell: the Fundamental Unit of Life
 - Cell theory
 - Prokaryotic and eukaryotic cells
 - Cell organelles and their functions
- Components of Eukaryotic cell
 - Cell wall, cell membrane, cytoplasm, nucleus, endoplasmic reticulum, Golgi apparatus, mitochondria, ribosomes, lysosomes, vacuoles, plastids, centrosome
- Cell division: Mitosis and Meiosis
 - Cell cycle
 - Phases of mitosis and meiosis
 - Significance of mitosis and meiosis

Unit 2: Animal tissues

- Histology
 - Types of tissues (epithelial, connective, muscular, nervous)
 - Structure and functions of different types of tissues

Unit 3: Human Nutrition

- Nutrients and Nutrition
 - Types of nutrients (carbohydrates, proteins, lipids, vitamins, minerals, water)
 - A balanced diet and its importance
 - Digestion and absorption of food
 - Assimilation of nutrients
 - Malnutrition and its types

Unit 4: Human Respiration

- Respiratory organs and mechanism of respiration
 - Respiratory system (nose, pharynx, larynx, trachea, bronchi, lungs, alveoli)
 - Process of inhalation and exhalation

- Gaseous exchange
- Respiratory disorders (asthma, bronchitis, emphysema)

Unit 5: Human Excretion

- Excretory organs and mechanism of excretion
 - Excretory system (kidneys, ureters, urinary bladder, urethra)
 - Formation of urine
 - Regulation of water and electrolyte balance
 - Renal disorders (kidney stones, nephritis, uremia)

Unit 6: Locomotion and Movement

- Types of muscles and their functions
 - Skeletal muscles, smooth muscles, cardiac muscles
 - Structure and functions of muscles
 - Mechanism of muscle contraction
 - Skeletal system and its functions

Unit 7: Coordination and Regulation

- Nervous system and endocrine system
 - Structure and functions of the nervous system (brain, spinal cord, peripheral nervous system)
 - Transmission of nerve impulses
 - Endocrine glands and their hormones
 - Functions of hormones
 - Coordination between nervous and endocrine systems

Unit 8: Reproduction

- Asexual and sexual reproduction
 - Types of asexual reproduction (fission, budding, fragmentation, parthenogenesis)
 - Sexual reproduction in animals
 - Male and female reproductive systems
 - Fertilization and development of embryo

Unit 9: Genetics

- Mendel's laws of inheritance
 - Mendel's experiments
 - Laws of inheritance (law of segregation, law of independent assortment)

- Genetic terms (alleles, genotype, phenotype, dominant, recessive, homozygous, heterozygous)
- Genetic crosses
- Genetic disorders
 - Chromosomal disorders (Down's syndrome, Turner's syndrome, Klinefelter's syndrome)
 - Mendelian disorders (sickle cell anaemia, cystic fibrosis)

Unit 10: Evolution

- Theories of evolution
 - Lamarck's theory of inheritance of acquired characters
 - Darwin's theory of natural selection
 - Modern synthetic theory of evolution
 - Evidence for evolution (fossil record, comparative anatomy, embryology, biogeography, molecular biology)

Unit 11: Ecology

- Ecosystem and its components
 - Biotic and abiotic components of the ecosystem
 - Food chains and food webs
 - Ecological pyramids
 - Biogeochemical cycles
 - Biodiversity and Conservation
 - Biodiversity and its importance
 - Threats to biodiversity
 - Conservation of biodiversity
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MHT CET Biology Syllabus 2025 for Botany

Unit 1: Biomolecules

- Biomolecules in Living System
 - Carbohydrates, proteins, lipids, nucleic acids
 - Structure and functions of biomolecules
 - Enzymes and their properties

Unit 2: Cell and Its Structure

- Components of prokaryotic and eukaryotic cells
 - Cell wall, cell membrane, cytoplasm, nucleus, endoplasmic reticulum, Golgi apparatus, mitochondria, ribosomes, lysosomes, vacuoles, plastids, centrosome
- Cell organelles and their functions

Unit 3: Plant Physiology

- Photosynthesis
 - Light and dark reactions
 - Factors affecting photosynthesis
 - Photosynthetic pigments
- Respiration
 - Aerobic and anaerobic respiration
 - Glycolysis, Krebs cycle, oxidative phosphorylation
- Plant growth and development
 - Growth hormones and their functions
 - Plant movements
- Plant water relations and mineral nutrition
 - Water absorption and transport
 - Mineral absorption and transport
 - Transpiration

Unit 4: Diversity of Living Organisms

- Classification of living organisms
 - Taxonomic hierarchy
 - Five kingdom classification
 - Characteristics of different kingdoms

Unit 5: Genetics

- Mendel's laws of inheritance
 - Mendel's experiments
 - Laws of inheritance (law of segregation, law of independent assortment)
 - Genetic terms (alleles, genotype, phenotype, dominant, recessive, homozygous, heterozygous)
 - Genetic crosses
- Genetic disorders
 - Chromosomal disorders (Down's syndrome, Turner's syndrome, Klinefelter's syndrome)

- Mendelian disorders (sickle cell anaemia, cystic fibrosis)

Unit 6: Plant Kingdom

- Classification of plants
 - Cryptogams and phanerogams
 - Classification of cryptogams (algae, fungi, bryophytes, pteridophytes)
 - Classification of phanerogams (gymnosperms, angiosperms)
 - Characteristics of different groups of plants

Unit 7: Plant Anatomy

- Tissues and organs of plants
 - Meristematic and permanent tissues
 - Structure and functions of different types of tissues
 - Root, stem, leaf, flower, fruit, seed

Unit 8: Reproduction in Plants

- Asexual and sexual reproduction in plants
 - Types of asexual reproduction (vegetative propagation)
 - Sexual reproduction in flowering plants
 - Pollination and fertilization
 - Formation of seeds and fruits

Unit 9: Ecology

- Ecosystem and its components
 - Biotic and abiotic components of the ecosystem
 - Food chains and food webs
 - Ecological pyramids
 - Biogeochemical cycles
- Biodiversity and Conservation
 - Biodiversity and its importance
 - Threats to biodiversity
 - Conservation of biodiversity