

Entrance Examination syllabus for M.Sc (Botany)

The M.Sc (Botany) entrance examination conducted by GJUS&T, Hisar will comprise of 100 Objective type questions (multiple choice). The test will be of 90 minute duration. The syllabus is as follows:

Diversity of Plants: Algae, Fungi, Lichen, Bryophytes, Pteridophyta & Gymnosperms (their salient features, classification, habit/habitat, life cycle, reproduction and physiological significances).

Angiosperms: Botanical nomenclature, natural and phylogenetic systems of classification, systematics and taxonomy of dicot- and monocot families with their economic importance; morphology, anatomy and reproductive biology of flowering plants.

Microbiology: Bacteria (general account, composition, structure, nutrition, reproduction, genetic recombination and their significance); Viruses (features, multiplication, bacteriophages, prions etc.); Diseases caused by different groups of microorganisms, symptoms and etiology.

Plant Physiology: Plant water relations; Plant nutrients and their deficiency; Photosynthesis (Photophosphorylation and carbon assimilation); Cellular respiration (breakdown of sugar and electron transport chain); Plant growth and phytohormones.

Elementary Biochemistry: structure and functions of simple and complex carbohydrates, lipids, amino acids and proteins, enzymes.

Ultrastructure of cell organelles and their function, cell division, cell interactions, structure of plasma membrane and cell wall, transport across membrane.

Mendel Law's of inheritance, gene interaction, linkage and crossing over, structural and numerical changes in chromosomes.

DNA replication, transcription, translation and regulation of gene expression; DNA damage and repair; Gene cloning and recombinant DNA technology.

Plant tissue culture and transgenics; Basics of plant breeding.

Environment and natural resources: Biodiversity: its significance and conservation, environmental pollution and climate change, their consequences.

Instrumentation: spectroscopy, microscopy, chromatography, staining techniques; molecular techniques viz. electrophoresis etc.

Basics of biostatistics and bioinformatics