

## **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**