

Syllabus for M.Sc. Entrance Test. 2022

1. **Structure and function of Biomolecules and metabolism :** Carbohydrates, Lipids, proteins and nucleic acids.
2. **Enzymes and metabolism:** Enzyme classification and kinetic parameters, carbohydrate, lipid, protein and nucleic acid metabolism,
3. **Animal and Plant Physiology:** Plant and animal Hormones, vitamins, transport mechanisms, meristems, primary & secondary tissues, primary structure of plant body, secondary growth, mineral nutrition, absorption, water & solute transport, transpiration, photosynthesis, respiration, plant movements, growth & senescence, digestive, cardiovascular, nervous, respiratory systems, reproductive systems. Respiration and photosynthesis.
4. **Cells and organelles:** Various types of cells of animals and plants. Cell organelles, cytoskeleton, cell surface and junctions, cell communication
5. **Genetics:** Mendelism and the idea of a gene, chromosomal and molecular basis of inheritance, genetic basis of development, population genetics.
6. **Molecular Biology:** DNA as a genetic material, RNA, genetic code, mechanisms and regulation of prokaryotic and eukaryotic DNA replication, transcription, translation, Polymerase chain reaction.
7. **Microorganisms:** Animal and plant viruses, bacteria, fungi, algae, microbial growth and nutrition. Micro organisms as human pathogens.
8. **Ecology and biodiversity:** Ecology and the biosphere, population and community ecology, various ecosystems and conservation, prokaryotic and eukaryotic biodiversity.
9. **Techniques used in biology:** Electrophoresis, chromatography, Microscopy, SEM, TEM, NMR, UV Visible spectroscopy.
10. Environmental pollution: various types pollution, Biomagnification.
11. Taxonomy of plants and animals.
12. Tissue culture of plant as well as animal cells, Transgenics, Totipotency, Stem cells.
13. Animal cloning.
14. Cell division cycle, stages of cell cycle, checkpoints, p53 tumor suppressor protein, mitosis and meiosis.

This test will be based on MCQs. (100 Marks, 100 MCQs, duration 2 hrs).