

UNIVERSITY OF MYSORE
Department of Studies in Zoology
M. Sc in Genetics
Syllabus for Entrance Test

- Unit I:** Mendel and his experiments - Mendelism. Extension of Mendelism - Interaction of genes (Complementary factors, Supplementary factors, Epistasis and Hypostasis),
- Unit II:** Linkage and Crossing over, Sex linked inheritance. Sex determination in *Drosophila*, Melandrium and Man; Human Syndromes.
- Unit III:** Gene concept: Classical and Modern Concept, Operon concept of gene regulation, Inborn errors of metabolism
- Unit IV:** Mitosis and Meiosis; Fine structure of chromosomes, Polytene and Lampbrush chromosomes.
- Unit V:** Ultrastructural organization of cell - Structure and Functions of cell organelles.
- Unit VI:** Structure of DNA and RNA, Functions of DNA (Replication, Transcription), Types of RNA and their functions, Genetic code, Translation
- Unit VII:** Gene mutations: Spontaneous, Induced and CLB technique. Structural and numerical changes in chromosomes.
- Unit VIII:** Cancer biology: Types, characteristics of cancer cell, oncogenes, tumor suppressor genes, carcinogens (physical, chemical, biological), metastasis, cancer therapy
- Unit IX:** Evolution: Lamarckism Darwinism, Neo-Darwinism. Reproductive isolation and Speciation
- Unit X:** Practical applications of Genetics and Biotechnology.

Note:

- Duration of entrance exam:** 60 min.
- Pattern of question paper:** 50 multiple choice questions of 1 mark each, to be answered in OMR sheets.
- Eligibility for writing entrance exam:** The candidates must have studied any Bachelor degree in Life science including Medicine, Pharmacy, Dental, BE in Biotechnology, Agriculture and Veterinary Sciences from any University/Institution recognized by UGC/ICAR/AICTE/Medical Council. The candidates must have completed bachelor degree with an aggregate of 45% marks excluding languages (40% in case of candidates belonging to SC & ST category).
- Eligibility for admission:** The marks scored in the entrance test and 50% marks of the bachelor degree examination (excluding languages) will be considered for preparing the merit list at the time of admission.