

MODEL QUESTION PAPER

M.Sc. Zoology Second year

MScZD2.01 GENETICS AND EVOLUTION

*Answer any THREE questions
All questions carry equal marks*

(3 x 10 = 30)

1. Describe the various types of Mutations and their importance.
2. What is epistasis? Explain the interaction of the genes.
3. Discuss intra and inter chromosomal aberrations.
4. What is ploidy? Describe the origin and effects of polyploidy.
5. Write an essay on the human evolution.
6. What is an isolating mechanism? Discuss the role of isolating mechanisms in the speciation.
7. Explain the population genetics in detail.
8. Elaborate on the molecular basis of evolution.

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MScZD2.02 DEVELOPMENTAL BIOLOGY AND ENDOCRINOLOGY

*Answer any THREE questions
All questions carry equal marks*

(3 x 10 = 30)

1. Write about the hormonal regulation of oestrous cycle in primate and non-primates.
2. Give a comparative account of gastrulation.
3. Describe the cytodifferentiation.
4. Write an essay on the embryo transfer technology and in vitro fertilization.
5. Describe the biosynthesis and secretion of steroid hormones.
6. Explain about the anatomy and hormones of pancreas and their role on the energy metabolism.
7. Describe the mechanism of hormone action. Add note on the role of receptors in the hormone function.
8. (a) Termination of hormone action.
(b) Signal transduction.

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MScZD2.03 CELL AND MOLECULAR BIOLOGY AND BIOTECHNOLOGY

*Answer any THREE questions
All questions carry equal marks*

(3 x 10 = 30)

1. Describe the cell-cell signaling.
2. Explain the transport across the cell membrane.
3. Write about the enzymology of DNA replication.
4. Describe the gene regulation and tryptophan operon concept.
5. Enumerate the equipment and materials required for cell and tissue culturing. Add note on the applications of cell culture.
6. Elaborate on the Recombinant DNA technology and its applications.
7. Describe the production of transgenic fish and their applications.
8. (a) Maxam – Gilbert DNA Sequencing.
(b) DNA finger printing.

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MScZD2.04 PATHOBIOLOGY AND IMMUNOLOGY

*Answer any THREE questions
All questions carry equal marks*

(3 x 10 = 30)

1. Write an essay on the pathogenicity and epidemiology of hepatitis.
2. Discuss the pathogenicity of any two bacterial human infections.
3. Describe the life cycle, pathogenicity and epidemiology of babesia.
4. Describe the life cycle, pathogenicity and epidemiology of dracunculus.
5. Write an essay on the production of Monoclonal antibodies and their applications.
6. Explain the various cells and organs of immunity.
7. Discuss the cellular immunity.
8. (a) Complement cascade.
(b) MHC.
