M.SC DEGREE EXAMINATION, Model QP
Zoology - First Semester
STRUCTURE AND FUNCTION OF INVERTEBRATES AND VERTEBRATES

Time : Three hours   **Maximum : 70 marks**

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Answer ALL Questions.

5 X 14 = 70 M

1 (a) write an essay on origin and functions of acoelomates and pseudocoelomates.

Or

 (b) answer the following

   (i)Filter feeding in Echinodermata.

   (ii) Structure of Respiratory Organs in Annelida

2. (a) Give a detail account on organization and general characters of phoronida and chetognatha.

Or

(b) write in detail about the larval forms of parasites.

3. (a)Discuss in detail the life cycle and biology of Trypanosomagambiense.

Or

 (b) answer the following

   i) Life cycle of Wuchereriabancrofit

   ii) Life cycle of Trypanosoma gambiense.

4. (a) Discuss in detail the evaluation of portal systems among vertebrates.

Or

 (b) Answer the following

   i) Respiratory system in reptiles

   ii) Discuss on arotic arches.

5 (a) Discuss on comparative anatomy and functions of brain and cranial nerves in vertebrates

Or

 (b) Describe the evolution of urinogenital systems among vertebrat

M.SC DEGREE EXAMINATION, Model QP
Zoology - First Semester
BIODIVERSITY AND SYSTEMATICS

Time : Three hours   Maximum : 70 marks
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Answer ALL Questions.
5 X 14 = 70 M

1 (a) Describe the Biodiversity at the Global, National, and Local levels?.

Or

(b) answer the following
  (i) Define Species Area Relationship?
  (ii) Write a note on Hotspots of India?

2. (a) Briefly describe about Causes of Biodiversity losses and Extinction?

Or

(b) What are the Hierarchical components of Biodiversity, and describe the types of diversities?

3. (a) What is Taxonomy and its components?

Or

(b) answer the following
  i) Define about Species Concept.?
  ii) Describe Nomenclature and its types?

4. (a) Describe briefly about Wildlife Protection Act? And write about the organization involved in it?

Or

(b) Answer the following
  i) Write about Biodiversity Threats?
  ii) Write a note on Cryopreservation?

5 (a) Define Genetically Modified Organisms?

Or

(b) Describe the definition and its application of DNA Fingerprinting?

M.SC DEGREE EXAMINATION, Model QP
Zoology - First Semester
DEVELOPMENTAL BIOLOGY

Time : Three hours   **Maximum : 70 marks**

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Answer ALL Questions.

5 X 14 = 70 M

1. a) Give an account on various types of eggs and function of egg.

(or)

   b) Write short notes on:
        i. Leydig cells
        ii. Vitellogenesis

2. a) What is Gastrulation and formation of germ layers

(or)

   b) Write short notes on:
        i. Determination and differentiation
        ii. Molecular events during fertilization.

3. a) Describe the mechanism of Hormonal regulation in insects.

(or)

   b) Describe the mechanism of Differentiation of Neurons.

4. a) What is apoptosis? Explain apoptosis in limb development.

(or)

   b) Describe the Process of oogenesis in mammals.

5. a) Describe the Regulation Anti-aging action.

(or)

   b) Describe the mechanism of Metamorphosis in insects and amphibians.

M.SC DEGREE EXAMINATION, Model QP
Zoology - First Semester
MOLECULAR CELL BIOLOGY

Time : Three hours   Maximum : 70 marks

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Answer ALL Questions.
5 X 14 = 70 M

1. (a) Discuss about structure and functions of Ribonucleic acid (RNA)
(Or)
   (b) Describe the levels of protein structure (primary, secondary, tertiary, quaternary).

2. (a) Answer the following:
        (i) Osmosis and Diffusion
        (ii) Electrical properties of Membrane
(Or)
   (b) Answer the following
        (i) Gibbs free energy
        (ii) Ion channels and Ion pumps

3. (a) Explain the role of RNA polymerase I, II, and III in eukaryotic cells.
(Or)
   (b) Describe various post-translational modifications (PTMs) of proteins and their biological significance.

4. (a) Discuss the mechanisms of translational regulation in eukaryotes
(Or)
   (b) Explain the regulation of gene expression in bacteriophages focusing on the lytic and lysogenic cycles of phage lambda.

5. (a) Write the following
        (i) Heterochromatin vs Euchromatin
        (ii) Operon Concept
(Or)
   (b) Answer the following
        (i) Control of Cell cycle
        (ii) Meiosis