QP Code: 22/PT/14/IA

POST-GRADUATE COURSE

Term End Examination — June, 2022/December, 2022

ZOOLOGY

Paper-1A : STRUCTURAL ORGANIZATION OF CHORDATES AND NON-CHORDATES

Time : 2 hours] [Full Marks : 50

Weightage of Marks : 80%

Special credit will be given for precise and correct answer. Marks will be deducted for spelling mistakes, untidiness and illegible handwriting. The figures in the margin indicate full marks.

1. Answer *two* questions : $9 \times 2 = 18$

   a) What are the general characteristics of Monotremata and Marsupialia ? Highlight the structure of the ruminant stomach. (3 + 3) + 3

   b) Classify class Amphibia up to living orders with distinctive characters and examples.

   c) Describe and illustrate locomotion in *Paramoecium* sp. Describe with suitable sketch the tracheal respiration in any arthropod studied by you. 5 + 4

   d) Give an account of epidermal glands found in vertebrates. Give suitable examples. 7 + 2

2. Answer *three* questions : $6 \times 3 = 18$

   a) Describe the phenomenon of torsion in any Gastropoda.

   b) Describe hyostylic, autostylic and craniostylic jaw suspension in vertebrates. 2 + 2 + 2

   c) Draw, label and describe the following invertebrate larvae : 3 + 3

      i) Rhabditiform

      ii) Veliger.

d) Distinguish between osmoregulators and osmoconformers citing suitable examples.

e) Draw and label the structure of lung in a mammal and explain the mechanism of O_2 - CO_2 exchange.

f) Explain synaptic transmission of nerve impulse with reference to structural organization of a synapse.

3. Answer *two* questions : $4 \times 2 = 8$

a) Draw, label and describe the types of scales found in any two of the following fishes :

(i) Dogfish ; (ii) Lata fish ; (iii) Koi fish ; (iv) Rohu fish. 2 + 2

b) i) What is 'Ram ventilation' ?

ii) Draw and label the structures of an ascidian tadpole larva.

2 + 2

c) State the location, structure and function of neuromast in fishes.

d) Write a brief note on the evolution of heart in vertebrates.

4. Answer *two* questions : $3 \times 2 = 6$

a) Write short notes on : 1 + 1 + 1

i) Corpus striatum ;

ii) Loop of Henle ;

iii) Tube feet (in Echinodermata).

b) Draw, label and describe different parts of a contour feather of pigeon.

c) Describe Calcichordate theory of the origin of chordates.

d) Describe with illustration the ultrastructure of cells present in the Proximal Convoluted Tubule (PCT) of a mammalian kidney.