

## POST-GRADUATE COURSE

Term End Examination — June, 2017

## 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 accuracy and relevance in the answer. Marks will be deducted for incorrect spelling, untidy work and illegible handwriting. The weightage for each question has been indicated in the margin.**

1. Answer *two* questions :  $9 \times 2 = 18$ 
  - a) Discuss the modern concept of the origin of chordates with illustration. Draw and describe pharynx of Balanoglossus.  $6 + 3$
  - b) Classify Reptilia up to living orders with distinctive characters and examples.  $9$
  - c) Describe with illustration different types of jaw suspension in vertebrates. Draw and describe different modifications of gills for filter feeding in mollusca.  $6 + 3$
  - d) Describe with diagram the structure of different excretory apparatus in Annelida. Distinguish between excretion and osmoregulation.  $6 + 3$

2. Answer *three* questions :  $6 \times 3 = 18$ 
  - a) Distinguish between single-circuit heart and double-circuit heart in vertebrates. Discuss the functions of thrombocytes and platelets.  $4 + 2$
  - b) Name different dermal derivatives found in vertebrates. Draw and describe different types of scales in fish and mention at least one species of fish where the particular scale is available.  $2 + 4$
  - c) Describe the structure of a nephron of mammalian kidney. State composition of human urine.  $4 + 2$
  - d) Comment on the evolutionary significance of the trochophore larva of Annelida and bipinnaria larva of Echinodermata.  $3 + 3$
  - e) Draw and describe the process of conjugation in *Paramecium*.  $6$
  - f) Describe with illustration two parasitic larval forms of invertebrates.  $6$
3. Answer *two* questions :  $4 \times 2 = 8$ 
  - a) Which class of Echinodermata show filter feeding habit ? Describe the process with suitable diagram.  $1 + 3$

- b) What is retrogressive metamorphosis ?  
Describe the phenomenon as it is found in  
*Ascidia*. 1 + 3
- c) Draw, label and describe the air sacs in  
*Columba*. 4
- d) Write short notes on the following : 2 × 2
- i) Atrio-ventricular node ( A-V node )
  - ii) Jacobson's organ.
4. Answer *two* questions : 3 × 2 = 6
- a) Mention the organs where IXth and Xth  
cranial nerves in a mammal are distributed.  
 $1 \frac{1}{2} \times 2$
  - b) What are the significant phenomena in the  
life history of *Sacculina* ? 3
  - c) Describe the lateral line system of fish and  
its function. 3
  - d) Write short notes on tricuspid and bisuspid  
valves.  $1 \frac{1}{2} \times 2$
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