

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SECOND SEMESTER EXAMINATION, MAY 2018

FIRST YEAR [BATCH 2017-20]

ZOOLOGY (General)

Paper : II

Date : 26/05/2018

Time : 11 am – 1 pm

Full Marks : 50

[Use a separate Answer Book for each Group]

## Group - A

1. Answer **any five** questions : [5×2]
  - i) How agnathans and gnathostomatans can be differentiated?
  - ii) State two characters of “Metatheria”.
  - iii) Hammer headed Shark and *Chimaera* belong to the Subclasses \_\_\_\_\_ and \_\_\_\_\_ respectively.
  - iv) What are carapace and plastron?
  - v) Distinguish between scales of fish and reptiles.
  - vi) What are barbs and barbules in a typical flight feather?
  - vii) Name one bacterium and one protozoan found in rumen of the ruminant stomach.
  - viii) What do you mean by venous heart? Give example. [1+1]
  
2. Answer **any two** questions : [2×2.5]
  - a) Give a detailed account on the oral hood of Amphioxus.
  - b) Mention three major characteristic features of class ‘Actinopterygii’. What is a heterocercal tail?[1.5+1]
  - c) What is the role of reticulum? Where is it located? [1.5+1]
  - d) What is meninges? Mention the role of the X<sup>th</sup> cranial nerve. [1+1.5]
  - e) Write down the features of a metanephric kidney? Give example. [1.5+1]
  
3. Answer **any two** questions : [2×5]
  - a) Which type of vertebra is usually found in reptiles? What are cleidoic eggs and parietal organs? What do you mean by pentadactyle limbs? [1+2+2]
  - b) Give the systematic position of the following animals with proper reasons : i) *Xenopus* sp.  
ii) *Sphenodon* sp. [2.5+2.5]
  - c) Which parts of the body, other than gills, are used by *Boleophthalmus* for respiration? Distinguish between physostomous and physoclistous types of swim bladders with examples. [2+2+1]

- d) Describe the structure of a typical mammalian hair with diagram. [3·5+1·5]
- e) Describe the process of rumination in *Bos* sp. with diagram. [4+1]

**Group - B**

4. Answer **any five** questions : [5×2]
- i) What is an amniotic egg?
  - ii) Define Grey crescent.
  - iii) What is Cortical reaction?
  - iv) What is MPF? Mention its role in Oogenesis. [1+1]
  - v) What is hypoblast?
  - vi) Mention the factors that determine the patterns of cleavage?
  - vii) What is speract?
  - viii) What is allantois?
5. Answer **any two** questions : [2×2·5]
- a) Draw and label the ultrastructure of a mammalian sperm.
  - b) What is primitive streak? Mention its function. [1·5+1]
  - c) Write down the functions of chorion.
  - d) Briefly describe the slow block to polyspermy.
  - e) Enumerate the functions of placenta.
6. Answer **any two** questions : [2×5]
- a) Briefly describe the process of vitellogenesis. What do you mean by telolecithal and centrolecithal eggs? [3+2]
  - b) Briefly explain the acrosome reaction in sea urchin. What is epiboly? [4+1]
  - c) What are bottle cells and area pellucida? What is rotational cleavage? [2+2+1]
  - d) Classify and explain different types of placenta depending upon the histology with suitable diagrams and appropriate examples. [5]
  - e) What is spermiogenesis? Briefly discuss the formation of head, midpiece and tail of sperm with a suitable diagrams. [1+(3+1)]

————— × —————