

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SECOND SEMESTER EXAMINATION, MAY 2016

FIRST YEAR [BATCH 2015-18]

ZOOLOGY (General)

Paper : II

Date : 25/05/2016

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]
  - a) Why are Urochordates called as Tunicates? Write two major general characters of the class Ascidiacea. [1+1]
  - b) *Doliolum* belongs to the class \_\_\_\_\_ & *Okiopleura* belongs to the class \_\_\_\_\_. [1+1]
  - c) What is head kidney? Give example. [1+1]
  - d) What is paedomorphosis? [2]
  - e) Mention two major features of the order chelonia. [2]
  - f) State the importance of gizzard in the digestive system of birds. [2]
  - g) In mammals \_\_\_\_\_ aortic arch is present and vertebrae are of \_\_\_\_\_ type. [1+1]
  - h) How cutaneous respiration takes place in a toad? [2]
2. Answer **any two** questions : [2×2.5]
  - a) Describe the function of jugular vein in pigeon. Give an example from the order Galliformes. [1.5+1]
  - b) Draw and label the L.S. of a hair. What is a contour feather? [1.5+1]
  - c) Explain the function of a ruminant stomach with a labelled diagram. [2.5]
  - d) Elucidate the function of gill rakers in fishes. Where do the subclavian arteries and the pectoral artery supply blood in the body of a fish? [1.5+1]
  - e) Describe major structural differences between the kidney of a hagfish and of a lamprey. [2.5]
3. Answer **any two** questions : [2×5]
  - a) Enumerate the structural speciality of a flight feather, which prevents air to pass through it during flight. Draw a figure. [5]
  - b) Illustrate a few important characteristic features of primates. Distinguish between a patagium and an avian wing. [2.5+2.5]
  - c) Write the differences between septal gill and opercular gill. Mention its function in respiration. [3+2]
  - d) Describe the necessary respiratory organ in *Clarias sp.* Elucidate how a swim bladder functions to maintain buoyancy in the body of a fish. [2+3]
  - e) Mention the differences between ganoid and cosmoid scales. [5]

## Group - B

4. Answer **any five** questions : [5×2]
  - a) Write two differences between the protostome and the deuterostomes. [2]
  - b) What is haemochorial placenta? Provide an example. [2]
  - c) What is fertilization envelope? State its functional significance. [1+1]
  - d) What is capacitation? [2]
  - e) What are slow and fast blocks in Sea Urchin fertilization? [1+1]
  - f) State two differences between telolecithal and centrolecithal egg. Cite examples. [1+1]
  - g) State the functions of androgen? [2]
  - h) State the difference between spermatogenesis and spermiogenesis. [2]

5. Answer **any two** questions : [2×2·5]
- a) State the functions of Sertoli cell. What is rete testis? [1·5+1]
  - b) What is inhibin? How does inhibin control the process of spermatogenesis? [1+1·5]
  - c) Explain the role of calcium in fertilization. [2·5]
  - d) What is placenta? State the difference between choriovitelline and chorioallantoic placenta with examples. [1+1·5]
  - e) What is Grey crescent? State its significance. [1+1·5]
6. Answer **any two** questions : [2×5]
- a) State the mechanism hormonal regulation during ovum production with a flow chart.
  - b) Briefly describe the outcome of Spemann-Mangold Organizer experiment.
  - c) Describe the sequence of gastrulation in frog.
  - d) Provide a brief idea about the types of cleavage citing suitable examples.
  - e) Describe in brief the mechanism of formation of yolk-sac and its development in chick.

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