

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. SECOND SEMESTER EXAMINATION, MAY 2019

FIRST YEAR [BATCH 2018-21]

ZOOLOGY (General)

Paper : II

Date : 27/05/2019

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. Hammer headed shark and *Chimaera* belong to the subclasses _____ and _____ respectively.
 - ii. State two identifying characters of the order Anura.
 - iii. What is the function of 'Organ of Jacobson'?
 - iv. Barn Owl and Downy Woodpecker come under orders _____ and _____ respectively.
 - v. State the differences between 'Contour feathers' and 'Down feathers'.
 - vi. Define ARO.
 - vii. Distinguish between scales of fish and reptiles.
 - viii. Write a short note on "Coronary Salcus".
2. Answer **any two** questions : [2×2.5]
 - a) Mention three major characteristic features of sub class 'Elasmobranchii'. What is a heterocercal tail? [1.5+1]
 - b) What is 'Paedomorphosis'? Site an example. [1.5+1]
 - c) Write a short note on structure of placoid scale.
 - d) State the basic differences of a single circuit heart and a double circuit heart.
 - e) Write down the origin and distribution of Xth cranial nerve in mammal.
3. Answer **any two** questions : [2×5]
 - a) What are carapace and plastron? State three important features of suborder Lacertilia. [2+3]
 - b) How can birds belonging to the order Falconiformes be identified? 'A Pelican's body is ideal for aquatic life' - justify. [2.5+2.5]
 - c) What is rumination? Draw a labelled diagram of ruminant stomach. [1+4]
 - d) Describe the structure of meta-nephric kidney with a suitable diagram. Where do you find a meta-nephric kidney? [(3+1)+1]
 - e) Describe with figure of a 'Typical gill structure' of a fish. [3.5+1.5]

Group - B

4. Answer **any five** questions : [5×2]
- i. What is Balbiani body?
 - ii. What is gray crescent?
 - iii. Define cortical granules.
 - iv. Differentiate between Protostomes and Deuterostomes.
 - v. What are polar bodies?
 - vi. Mention the factors that determine patterns of cleavage.
 - vii. What is resact?
 - viii. Explain the term "Fate Map" with an example. [1+1]
5. Answer **any two** questions : [2×2.5]
- a) Draw and label the ultrastructure of a mammalian sperm.
 - b) State the differences between Holoblastic cleavage and Meroblastic cleavage. Give example for both. [1.5+1]
 - c) Write the functions of avian yolk sac.
 - d) Briefly describe sperm attraction and activation.
 - e) Compare between allantoic and yolk sac placenta.
6. Answer **any two** questions : [2×5]
- a) What is 'meanchette'? What are the steps for 'Spermateliosis'? [1+4]
 - b) Describe the 'Cortical reaction' during fertilization. [5]
 - c) Name the determinants of cleavage pattern. What is superficial cleavage? What are Chorionic villi? [2+2+1]
 - d) Classify different types of eggs depending upon their yolk content. What is chorio-allantoic membrane? [3+2]
 - e) What is dorsal lip of blastopore? How do presumptive ectodermal, mesodermal and endodermal cells of blastula take their respective position in an amphibian gastrula? [1+4]

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