

2022

ZOOLOGY — HONOURS

Paper : CC-5

Full Marks : 50

*The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.*Answer **question no. 1** and **any four** questions from the rest.

1. Answer **any five** questions : 2×5
- State two important differences between primary and secondary gill bars of *Branchiostoma* sp.
 - What is diastema? In which animal is it found?
 - What is rete mirabilia? State its significance.
 - Ichthyophis* is not a snake. — Why?
 - Distinguish between down feather and filoplume.
 - What is 'Organ of Jacobson'? In which animal is it found?
 - State two mammalian characters of Monotremata.
 - What is keratin fibre horn? Where is it found?
 - Mention the importance of endostyle in *Branchiostoma*.
2. (a) Place the following animals (**any three**) in their respective classes and orders with reasons (one character for each taxon) :
Rana sp., *Calotes* sp., *Columba* sp., *Macropus* sp.
- (b) Distinguish between cyclostomes and fishes. (2×3)+4
3. (a) In what respect the metamorphosis of *Ascidia* differs from that of anuran amphibia?
- (b) Narrate the steps of metamorphic changes in ascidian tadpole with suitable diagram. 4+(4+2)
4. Define migration. Mention the types of bird migration. State the factors controlling bird migration. How birds navigate during migration? 1+3+3+3
5. (a) What is Paedogenesis? How does it differ from Neoteny?
- (b) What are the intrinsic and extrinsic factors involved in Neoteny?
- (c) How can an individual bat discriminate between the echos of its own call and those of the other bats? 3+3+4

Please Turn Over

6. (a) Draw and describe the structure of a typical flight feather of birds.
(b) Draw and label the microscopic structure of a typical mammalian hair.
(c) State the important differences between Ratitae and Carinate. (2+2)+3+3
7. (a) Describe the structure of physoclistous swim bladder in fish. How does swim bladder act as an accessory respiratory organ in some fishes?
(b) Discuss the principles and mechanism of aerodynamics of bird flight. (2+3)+5
8. Write short notes on **any two** of the following : 5×2
- (a) Evolution and significance of double circuit heart in vertebrates
 - (b) Accessory respiratory structure in *Anabas* sp.
 - (c) Structure of ruminant stomach
 - (d) Structure of different types of fangs in poisonous snake.
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