

2021

ZOOLOGY — HONOURS

Paper : DSE-B(2)-1

(Animal Behaviour and Chronobiology)

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 **any ten** questions.

1. (a) What do you mean by operant conditioning? Give example.
(b) Distinguish between habituation and sensitization with suitable example. (2+1)+2
2. (a) What is the difference between 'motivation' and 'drive'?
(b) Explain 'taxis' and 'kinesis' with suitable examples. 2+3
3. What do you mean by reciprocal altruism? Discuss with suitable example. 2+3
4. Briefly describe caste system in a termite colony. 5
5. (a) State the characteristic features of eusocial insects.
(b) Describe waggle dance in honey bee. 2+3
6. What is sibling rivalry? Give two examples. State its significance. 2+2+1
7. Discuss with suitable example intrasexual and intersexual selection in the light of 'male-male competition' and 'female choice'. 2½+2½
8. Draw and describe the nest building behaviour of any five fishes. 5
9. (a) Comment on function of 'queen pheromone' in honeybee colony.
(b) Justify altruistic behaviour in haplo-diploid insects. 2+3
10. (a) How does learning differ from instinct?
(b) What specific role is played by sign stimulus in Fixed Action Pattern (FAP)? Elaborate with suitable example. 2+3
11. (a) Comment on endocrine control of bird migration.
(b) Discuss the adaptive significance of bird migration. 3+2

Please Turn Over

12. What is imprinting? Elaborate the concept of sexual imprinting with example. 2+3
13. Discuss with suitable diagram the role of Supra Chiasmatic Nucleus in maintenance of circadian rhythm. Give one example of circadian rhythm in human and an invertebrate animal. 3+2
14. What is selfishness? Give one example of selfishness in animal kingdom. Comment on its adaptive significance. 2+1+2
15. Write short notes on **any two** : 2½×2
- (a) Zugunruhe
 - (b) Zeitgeber
 - (c) Entrainment
 - (d) Hamilton's rule.
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2021

ZOOLOGY — HONOURS

Paper : DSE-B(2)-2

(Fish and Fishery)

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 **any ten** questions.

1. Classify class Osteichthyes (upto subclass) mentioning two characteristics and one example of each taxon. 5
2. State modifications of mouth structure of fishes depending on their feeding habitat at different water levels. How does relative length of gut (RLG) value indicate feeding habit of fishes? 3+2
3. Name the types of median fins found in fishes with their location on the body. What do you mean by homocercal and heterocercal caudal fin? 3+2
4. Differentiate between cycloid and ctenoid scales. How scales are used to determine the age of a fish? 3+2
5. Distinguish between physostomous and physoclistous types of swim-bladder. Write the role of swim-bladder as a hydrostatic organ. 3+2
6. What is the function of electric organ in fishes? Write a short note on bioluminescence in fishes. 2+3
7. Distinguish between gill net and drag net. Name any two types of fishing craft used in West Bengal. 3+2
8. State any three differences between inland and marine fisheries. How GIS technology has improved fishing yield? 3+2
9. Briefly discuss the reasons behind depletion of fisheries resources in India. 5
10. Differentiate between intensive and semi-intensive system of fish culture. What are pen culture and cage culture? 3+2
11. Write the method for selection and segregation of brood stock in an aquaculture farm. 5
12. Elaborate the steps of hypophysation during induced breeding of carps. 5

Please Turn Over

13. How water quality is important for preparation of aquarium? Name two fish preservation techniques. 3+2
14. Write the name of causal organism, two symptoms and preventive measure of one bacterial and one viral disease of fish. 2½+2½
15. What are the advantages of composite fish culture? State the importance of isinglass as fishery by-product. What is transgenic fish? 2+2+1
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