2022

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 **question no. 1** and **any four** questions from the rest.

1. Answer **any five** questions :　　　　　　　　　　　　　　　　　　　　　　　2×5

   (a) What do you mean by eusociality?

   (b) Name the hormone that controls the 'light-dark cycle' in biological clock. Name its precursor amino acid.

   (c) Mention the periodicity of tidal rhythm and lunar rhythm.

   (d) What do you mean by cultural transmission?

   (e) Define polygyny with example.

   (f) What is 'Hamilton's rule'?

   (g) Mention two differences between kinesis and taxis.

   (h) What is nuptial flight?

   (i) What is sign stimulus?

2. (a) What is social organisation? Write characteristics of macropterous, brachypterous and apterous forms of termites.

   (b) How new termite colony is established?　　　　　　　　　　　　　　(1+2+2+2)+3

3. (a) What is habituation? How instinctive behaviour differs from learning behaviour? Give suitable examples.

   (b) What is classical conditioning? What are its significances?　　　　　　(2+3+2)+(1+2)

4. (a) What is parent offspring conflict? How the 'reproductive fitness' and 'inclusive fitness' get influenced by this?

   (b) What is kin selection? Write down its adaptive significance.　　　　　　(2+3)+(2+3)

Please Turn Over

5. (a) What do you mean by 'sexual dimorphism'? How does it control the mate choice in peacock?

   (b) What is intrasexual selection? How it is exhibited in male-male competition? — Elaborate with relevant example. (2+3)+(2+3)

6. (a) 'Brod pouching and viviparity can be considered as examples of parental care in fishes'. — Elaborate with relevant examples.

   (b) What is 'endogenous pacemaker'? Specify its role in controlling circadian rhythm. (3+3)+(2+2)

7. Distinguish between photic and non-photic zeitgebers. How do they influence the migratory behaviour in birds? 6+4

8. Write short notes on : 2½×4

   (a) Geotaxis

   (b) Reciprocal altruism

   (c) FAP

   (d) Sibling rivalry.