



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2021-22

ZOOADSE01T-ZOOLOGY (DSE1/2)

ANIMAL BEHAVIOUR

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

Candidates should answer in their own words and adhere to the word limit as practicable.

All symbols are of usual significance.

1. Answer any **eight** questions from the following: $2 \times 8 = 16$
- (a) What do you know about SCN? Where is it located?
 - (b) What is female choice? Give an example.
 - (c) What are altruism and reciprocal altruism?
 - (d) What do you mean by inclusive fitness?
 - (e) What is sexual dimorphism? Give an insect example.
 - (f) What are Kin and Kin selection?
 - (g) Distinguish between instinct and learning behaviour.
 - (h) Raghabendra Gadagkar is famous for his studies on an insect. Give the common name and scientific name of this insect.
 - (i) What is Darwinian fitness?
 - (j) What is innate behaviour?
 - (k) Distinguish between Solitary and Social organisms with suitable examples in each.
2. Answer any **three** questions from the following: $3 \times 3 = 9$
- (a) What is fixed action pattern? Illustrate this phenomenon with suitable example. $1+2$
 - (b) What is the difference between direct and indirect fitnesses?
 - (c) Why do animals exhibit circadian rhythm?
 - (d) State the role of melatonin in maintaining photoperiodism in animal life.
 - (e) What is bee language? What will happen if all honey bees become vanished from the earth? $1+2$
 - (f) What are ultradian, lunar and circadian rhythms?

3. Answer any ***three*** questions from the following: $5 \times 3 = 15$
- (a) What is eusociality? Mention the factors that benefit the evolution of eusociality. 1+3+1
What is ‘point of no return’ in eusociality evolution?
- (b) Describe the degree of relatedness among different members of an insect colony using Hamilton’s Rule (r).
- (c) Which animals exhibit lunar rhythm and why? Discuss about the role of any physiological mechanism by which a species may exhibit lunar rhythm. $1\frac{1}{2} + 3\frac{1}{2}$
- (d) How many types of castes are found in a beehive? Name them. What are ‘round dance’ and ‘waggle dance’ in bee communication? 1+(2+2)
- (e) What is habituation? What do you mean by filial and Sexual imprinting? Explain with examples. 1+2+2
- (f) What is biological clock? Give a brief idea about the location of biological clock in animals. 2+3

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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