



**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: 2×8 = 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) Raghendra 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: 3×3 = 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: 5×3 = 15
- (a) What is eusociality? Mention the factors that benefit the evolution of eusociality. What is 'point of no return' in eusociality evolution? 1+3+1
- (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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