

B.Sc. 6th Semester (Honours) Examination, 2022 (CBCS)

Subject: Zoology

Paper: DSE-3

(Animal Behaviour)

Full Marks: 40

Time: 2 Hrs.

The figures in the right hand margin indicate full marks.

Candidates are required to give the answers in their own words as far as practicable.

Group - A

1. Answer any **five** questions of the following: 2×5=10

- a) What is 'sexual conflict'?
- b) What is meant by lek polygyny?
- c) Define 'inclusive fitness'.
- d) Differentiate between 'honest signals' and 'dishonest signals'.
- e) What is reciprocal altruism?
- f) Differentiate between 'vocalization' and 'mechanical call' as mating calls.
- g) How does 'reverse countershading' help in increasing fitness?
- h) What is meant by sign stimulus?

Group - B

2. Answer any **two** questions of the following: 5×2=10

- a) Comment on sexual conflict in parental care with suitable examples. 5
- b) What are the factors influencing biological clock? What is jet lag? 3+2=5
- c) Elaborate 'Hamilton's rule' in Kin Selection. 5
- d) Briefly describe evolutionary disadvantages of Fixed Action Pattern (FAP). 5

Group - C

3. Answer any **two** questions of the following: 10×2=20

- a) Explain how waggle dance is helpful to determine the direction and distance of the food sources in honey bee. Write about the advantages of being social. What is queen substance? 6+2+2=10

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| b) | Discuss the possible theories/hypotheses that could explain why female mate choice has evolved in nature. Illustrate male rivalry with an example. What is extra-pair copulation? | 5+3+2 |
| c) | Describe the mechanisms of navigation in animals. | 10 |
| d) | Describe with diagram the molecular mechanism of circadian rhythm in <i>Drosophila</i> following the PER/TIM and the CLK/CYC transcription-translation feedback loop. | 10 |
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(Wildlife Conservation)

Full Marks: 40

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Group - A

1. Answer any **five** questions of the following: 2×5=10
- a) Differentiate between pug marks of dog and cat family.
 - b) Define wildlife according to Wildlife Protection Act, 1972.
 - c) What is ecesis?
 - d) What is community reserve?
 - e) Define ecology of perturbation.
 - f) Write down full form of NTCA and IBWL.
 - g) Mention two ways for mitigation of human-wildlife conflict.
 - h) What do you mean by Red Data Book?

Group - B

2. Answer any **two** questions of the following: 5×2=10
- a) Explain the *Ex-situ* mode of wildlife conservation with a suitable flowchart. Define Gene Bank. 4+1
 - b) Why "Cover construction" is important for habitat management of wildlife? Briefly describe different strategies for 'cover construction'. 2+3
 - c) Differentiate between National Park and Wildlife Sanctuary with suitable example. Name the Ramsar site of West Bengal. 4+1
 - d) Describe the causes and consequences of human-wildlife conflicts. 5

Group - C

3. Answer any **two** questions of the following: 10×2=20
- a) Describe both positive and negative values of wildlife. Write down causes of wildlife depletion in India. 3+3+4

- b) What do you mean by eco-tourism? '*Reintroduction is necessary for population stability*' — Explain with example. 4+6
- c) What is meant by census? How does the size of a population of carnivorous animals can be estimated through fecal analysis and from analysis of pug marks? 2+4+4
- d) Define biodiversity hotspots. State the Role of remote sensing and GIS in wildlife management. Cite two examples from Schedule-I (Part-I). 1+7+2
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