

Total number of printed pages-4

1 (Sem-4) ZLG 4

2025

ZOOLOGY

Paper : ZLG0400404

(Animal Behaviour and Chronobiology)

Full Marks : 45

Time : 2 hours

***The figures in the margin indicate
full marks for the questions.***

1. Choose the correct answers : $1 \times 5 = 5$
- A. Who is known as the "Father of Ethology" ?
- (a) Ivan Pavlov
 - (b) Konrad Lorenz
 - (c) Nikolass Tinbergen
 - (d) Karl Von Frisch

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Contd.

B. What is the purpose of the "waggle dance" in honeybees?

- (a) To attract a mate
- (b) To communicate the location of food
- (c) To establish dominance in the hive
- (d) To signal danger

C. What is the term for external cues that regulate biological rhythms?

- (a) Zeitgebers
- (b) Chronometers
- (c) Photometers
- (d) Circadian markers

D. Termites have a caste system consisting of which *three* main groups?

- (a) Soldiers, Queens, Hunters
- (b) Queens, Workers, Soldiers
- (c) Workers, Drones, Kings
- (d) Soldiers, Kings, Foragers

E. Which hormone is responsible for regulating the sleep-wake cycle?

- (a) Cortisol
- (b) Insulin
- (c) Melatonin
- (d) Adrenaline

2. Write short notes on the following :

(any five)

2×5=10

- (A) Biological rhythms
- (B) Taxis and Kinesis
- (C) Proximate causes of behaviour
- (D) Instinct behaviour
- (E) Biological oscillations
- (F) Environmental zeitgebers

3. Answer briefly : **(any four)**

5×4=20

A. Name *any two* scientists who contributed to the study of animal behaviour and mention their key discoveries.

B. Write about dance language of honey bee as means of animal communication.

- C. How does photoperiod influence seasonal reproduction in vertebrates? Provide an example.
- D. Write about animal navigation with suitable examples.
- E. What is the importance of the subject of chronobiology? Write a note on the historical development of the subject.

4. Answer elaborately : **(any one)** 10

- A. Compare and contrast the eusocial organization of honeybees, termites, and ants. Which system do you think is the most efficient, and why?
- B. Explain the different methods of studying animal behaviour.
- C. Describe the role of melatonin in the sleep-wake cycle of mammals.