(7 pages) **Reg. No. :**.....

Code No. : 30710 E **Sub. Code : ESZO 22/ FSZO 22**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2025.

Second Semester

Zoology

Skill Enhancement Course – ANIMAL BEHAVIOR

(For those who joined in July 2023 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which molecule carries the genetic blueprint of an organism?
   (a) RNA
   (b) Protein
   (c) DNA
   (d) Lipid

2. Which part of the brain is most associated with complex behaviour?
   (a) Cerebellum (b) Cerebral cortex
   (c) Medulla oblongata (d) Spinal cord

3. Echolocation is a perception mechanism used by
   (a) Birds and reptiles
   (b) Insects
   (c) Bats and dolphins
   (d) Herbivores and carnivores

4. Which of the following illustrates altruism?
   (a) A predator hunting alone
   (b) A bee sacrificing its life to protect the hive
   (c) A bird competing for food
   (d) A male lion taking over a new pride

5. Which organ is most responsible for regulating homeostasis in animals?
   (a) Heart (b) Hypothalamus
   (c) Liver (d) Stomach

6. Which type of learning occurs through rewards and punishments?

(a) Classical conditioning

(b) Habituation

(c) Operant conditioning

(d) Observational learning

7. Which of the following is an example of learned behavior?

(a) Birds migrating in winter

(b) Dog salivating at the sound of a bell

(c) Newborn sucking reflex

(d) Spider spinning a web

8. A common example of displacement activity in birds is

(a) Grooming in stressful situations

(b) Aggressive attacks on predators

(c) Sleeping during flight

(d) Nest-building during migration

9. What is the role of the protein CRY in *Drosophila* circadian rhythms?

(a) It acts as a photoreceptor for light entrainment

(b) It forms the core of the transcriptional feedback loop

(c) It degrades PER and TIM proteins

(d) It stabilizes the CLOCK-CYCLE complex

10. Which structure in mammals serves as the master circadian clock?

(a) Pineal gland

(b) Suprachiasmatic nucleus

(c) Hippocampus

(d) Medulla oblongata

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain with an example of a behavior controlled by single-gene inheritance.

Or

(b) Mention the sources of genetic variation.

12. (a) Explain the altruistic behavior in animals with examples.

Or

(b) Discuss the neural control of behaviour.

13. (a) Explain the biological basis of learning.

Or

(b) Enumerate the habituation.

14. (a) Explain the significance of displacement activities in animal behaviour.

Or

(b) Explain complex behavior of honey beees

15. (a) Define circadian rhythm and its significance in multicellular animals.

Or

(b) How do animals measure day length to regulate seasonal behaviours?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain how polygenic inheritance contributes to the complexity of human behaviours.

Or

(b) Discuss the role of chromosomes in inheritance.

17. (a) Discuss the neural mechanism underlying instinctive and learned behaviours.

Or

(b) Explain the role of sensory adaptation in animal perception.

18. (a) Discuss how environmental changes influence animal physiology and behaviour?

Or

(b) Explain how problem-solving and decision-making contribute to animal intelligence.

19. (a) Discuss the mechanisms that influence decision-making in animals.

Or

(b) Explain the complex social structure of honey bee colonies.

20. (a) Explain the molecular mechanisms of the circadian clock and discuss.

Or

(b) Discuss about the chronotheraphy and chronomedicine.
