This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **5583**

Unique Paper Code : **6792012402**

Name of the Paper : **Animal Physiology**

Name of the Course : **B.Sc. Honors Biological Sciences (NEP) 2025**

Semester : **IV**

Duration : **2 Hours** Maximum Marks : **60**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *four* questions in all.

Question No. **1** is compulsory.

All questions carry equal marks.

All parts of a question should be answered together.

1. (*a*) Define the following (any *four*) : 4×1=4

   (*i*) Heterothermy

   (*ii*) Thermogenesis

   (*iii*) Spiracle

   (*iv*) Lethal temperature

   (*v*) Electroreceptors

   (*vi*) Synapse.

P.T.O.

(*b*) Distinguish between (any *two*) : 2×2=4

(*i*) Axon and Dendrites

(*ii*) Single circulatory system and Double circulatory system

(*iii*) Circumfluence and Circumvallation (in *Amoeba*)

(*iv*) Osmoconformers and Osmoregulators.

(*c*) Give the location and explain the function of the following (any *two*) : 2×2=4

(*i*) Baleen plates

(*ii*) BAT

(*iii*) Rectal gland

(*iv*) Abomasum.

(*d*) Give reasons for the following : 1.5×2=3

(*i*) Snakes put their tongue back and forth in air.

(*ii*) Marine birds and reptiles have large nasal glands.

2. (*a*) What is cardiac output and what factors affect its regulation ?

(*b*) What are some of the key adaptations that enable camels to thrive in extreme environments ? 7.5×2=15

3. (*a*) Discuss the general principles of sensory physiology. Add a note on the role of infrasound and infrared perception in animals.

(*b*) What are the key anatomical structures and physiological processes involved in fish respiration ? 7.5×2=15

4. (*a*) What mechanisms do freshwater teleost fishes use to maintain osmotic balance ? 10

(*b*) Explain the adaptations of Kangaroo rats for hot desert environments. 5

5. (*a*) Describe the process of cellulose digestion in ruminants and non-ruminants.

(*b*) How do the structural and functional adaptations of the avian respiratory system support efficient gas exchange ? 7.5×2=15

6. Write short notes on any *three* of the following : 3×5=15

(*a*) Osmoregulation in Marine elasmobranchs

(*b*) Respiratory system in insects

(*c*) Lateral line system in fishes

(*d*) Adaptations of Arctic fox.