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3 (Sem-5) ZOO M1

2021

(Held in 2022)

ZOOLOGY

(Major)

Paper : 5.1

(Animal Physiology)

Full Marks : 60

Time : Three hours

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

1. Answer the following questions very briefly :
1×7=7

- (a) What is ammonotelic animal?
- (b) Define neurogenic heart with example.
- (c) What is buffer?
- (d) Write the name of the respiratory centre present in the vertebrate brain.

Contd.

- (e) Define the vital capacity of the lung.
- (f) What is Kupffer cell?
- (g) Write the importance of podocyte cell in kidney.

2. Answer **any four** of the following questions :
2×4=8

- (a) Define all or none response phenomenon of nerve fibre.
- (b) What is osmoregulation? Write the difference between osmoconformer and osmoregulator.
- (c) Write about the matrix of blood.
- (d) What is haemopoiesis?
- (e) Define synapse.

3. Answer **any three** questions from the following :
5×3=15

- (a) Write about the process of protein digestion in mammal.
- (b) State the name of the fat-soluble vitamins. Discuss the chemical effects of the deficiencies of each of these vitamins.

- (c) Describe the renin-angiotensin mechanism present in vertebrate animal.

- (d) Mention the role of chloride-secreting cells in the gills of marine teleost.

4. What are the functional differences between cortical nephron and juxtamedullary nephron? Write briefly about the mechanism of urine formation in vertebrate animal.
4+6=10

Or

What is motor end plate? Write about the mechanism of muscle contraction after nerve stimulation.
4+6=10

5. Give a detailed account of the cellular contents of the blood. Briefly describe the functions of platelet.
7+3=10

Or

Write about the nervous and hormonal regulation of digestion.
10

6. Write the importance of pancreas in digestion of fat and carbohydrate. Describe the mechanism of absorption of long-chain fatty acids. 5+5=10

Or

- Write the names of different respiratory pigments and their functions. Describe the regulatory mechanism of respiration in vertebrate animals. 5+5=10