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**2022/TDC/ODD/SEM/ZOODSC/
GE-301T/031**

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TDC (CBCS) Odd Semester Exam., 2022

ZOOLOGY

(3rd Semester)

Course No. : ZOODSC/GE-301T

(Physiology and Biochemistry)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

UNIT—I

1. Answer any three of the following questions :

1×3=3

- (a)** What is monopolar neuron?
- (b)** Define resting membrane potential.
- (c)** Name the metal associated with muscle contraction.
- (d)** What do you mean by 'A band'?

(2)



(3)

2. Answer any *one* of the following questions : 2

- (a) What is saltatory conduction?
- (b) Why is striated muscle fibre called skeletal muscle fibre?

3. Answer any *one* of the following questions : 5

- (a) Describe in detail the propagation of nerve impulse in non-modulated neuron with diagram.
- (b) Define synaptic transmission. Explain the different types of synaptic transmission you have studied.

UNIT—II

4. Answer any *three* of the following questions :

1×3=3

- (a) What is oxyhaemoglobin?
- (b) Define digestion.
- (c) What is tidal volume?
- (d) Name the digestive juice of jejunum.

5. Answer any *one* of the following questions : 2

- (a) Define simple protein. Give example.
- (b) Why carbohydrate digestion does not occur in stomach?

6. Answer any *one* of the following questions : 5

- (a) What is absorption? Discuss the process of absorption of protein in the digestive system.
- (b) What is pulmonary ventilation? Discuss the process of transport of CO₂ through the blood.

UNIT—III

7. Answer any *three* of the following questions :

1×3=3

- (a) Define ultrafiltration.
- (b) What are lymphocytes?
- (c) What is duct of Bellini?
- (d) Name the chamber of the human heart which receives deoxygenated blood.

(4)

8. Answer any *one* of the following questions : 2

(a) What is His-Purkinje system? State its function.

(b) State the composition of urine.

9. Answer any *one* of the following questions : 5

(a) Describe the mechanism of urine formation with illustrative diagram.

(b) Describe the origin and conduction of cardiac impulse with proper illustration.

UNIT—IV

10. Answer any *three* of the following questions :

1×3=3

(a) Which gland is known as the 'band master of endocrine orchestra'?

(b) What is Graafian follicle?

(c) What is spermiogenesis?

(d) Name the endocrine part of pancreas.

(5)

11. Answer any *one* of the following questions : 2

(a) Differentiate between endocrine and exocrine glands.

(b) Mention different phases of menstrual cycle.

12. Answer any *one* of the following questions : 5

(a) Why is pancreas called heterocrine gland? State the functions of insulin and glucagon.

(b) Describe the process of oogenesis with illustrative diagrams.

UNIT—V

13. Answer any *three* of the following questions :

1×3=3

(a) What is holoenzyme?

(b) What is allosteric modulation?

(c) Who proposed the lock and key theory of enzyme action?

(d) Define glycolysis.

14. Answer any *one* of the following questions : 2

(a) Name the different classes of enzymes as per IUB classification with example.

(b) Write a note on electron transport chain.

15. Answer any *one* of the following questions : 5

(a) Describe the different mechanisms of enzyme action with illustrative diagram.

(b) Write a note on pentose phosphate pathway.
