



**2019/TDC/ODD/SEM/ZOODSC/  
ZOOGE-301T/041**

**TDC (CBCS) Odd Semester Exam., 2019**

**ZOOLOGY**

**( 3rd Semester )**

Course No. : ZOODSC/ZOOGE-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 neuron?
- (b) Define resting membrane potential.
- (c) Name the metal associated with muscle contraction.
- (d) What do you mean by I-band?



( 2 )

2. Answer any one of the following questions : 2
- (a) How myelinated nerve fibre differ from non-myelinated nerve fibre?
  - (b) Why is striated muscle fibre called skeletal muscle fibre?

3. Draw and describe the structure of a typical neuron. Add a note on its function. 5

Or

Discuss the biochemistry of muscle contraction. 5

UNIT—II

4. Answer any three of the following questions : 1×3=3
- (a) Define digestion.
  - (b) What is tidal volume?
  - (c) Name the end product of lipid hydrolysis.
  - (d) Name the enzyme associated with carbonic acid formation.

5. Answer any one of the following questions : 2
- (a) State the function of bile.
  - (b) Define simple protein. Give examples.

( 3 )

6. Describe how food is digested in stomach. Add a note on the absorption of protein. 5

Or

What is pulmonary ventilation? Discuss the process of transportation of CO<sub>2</sub> in the blood. 5

UNIT—III

7. Answer any three of the following questions : 1×3=3

- (a) Define homeostasis.
- (b) Name the respiratory pigment found in human blood.
- (c) What are lymphocytes?
- (d) Name the chamber of the human heart which receives deoxygenated blood.

8. Answer any one of the following questions : 2
- (a) State the composition of urine.
  - (b) Write a note on cardiac cycle.

9. Discuss the countercurrent mechanism of urine formation. 5
- Or
- Describe the origin and conduction of cardiac impulse with proper illustration. 5



## UNIT—IV

10. Answer any *three* of the following questions : 1×3=3

- (a) Name the male sex hormone.
- (b) Which gland is known as the master gland of the body?
- (c) Name the endocrine part of pancreas.
- (d) What is epinephrine?

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

- (a) Differentiate between endocrine and exocrine glands.
- (b) Write the functions of adrenal gland.

12. Discuss the process of spermatogenesis in man. Add a note on the hormonal control of spermatogenesis. 5

Or

Describe the structure of pituitary gland with a labelled diagram and mention the hormones secreted by anterior pituitary stating their functions. 5

20J/1082

( Continued )

## UNIT—V

13. Answer any *three* of the following questions : 1×3=3

- (a) Define enzyme.
- (b) Who proposed the lock and key theory of enzyme action?
- (c) After a complete TCA cycle, how many numbers of ATP are produced?
- (d) Define glycolysis.

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

- (a) Name the different classes of enzyme as per IUB classification with example.
- (b) Write a note on gluconeogenesis.

15. Describe the different mechanisms of enzyme action with illustrative diagram. 5

Or

Write notes on the following : 5

- (a) Urea cycle
- (b) Biosynthesis and  $\beta$ -oxidation of palmitic acid

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