2 0 1 9

(CBCS)

(5th Semester)

ZOOLOGY

SEVENTH PAPER

(Biochemistry)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 10)

Tick (✓) the correct answer in the brackets provided : 1×10=10

1. A pentose sugar is

(a) dihydroxyacetone ( )

(b) ribulose ( )

(c) erythrose ( )

(d) glucose ( )

2. The two amino acids having R-groups with a negative net charge at pH 7·0 are

(a) aspartate and glutamate ( )

(b) arginine and histidine ( )

(c) cysteine and methionine ( )

(d) proline and valine ( )

3. What is the nature of an enzyme?

(a) Vitamin ( )

(b) Lipid ( )

(c) Carbohydrate ( )

(d) Protein ( )

4. Calcium deficiency in the body occurs in the absence of

(a) vitamin C ( )

(b) vitamin D ( )

(c) vitamin A ( )

(d) vitamin E ( )

5. Dihydroxyacetone phosphate is rapidly and reversibly converted to

(a) glyceraldehyde-3-phosphate ( )

(b) 1,3-biphosphoglycerate ( )

(c) fructose-1,6-biphosphate ( )

(d) fructose-6-phosphate ( )

6. Glycogenesis from glucose-1-phosphate require which of the following?

(a) Phosphoglucomutase ( )

(b) Uridine triphosphate ( )

(c) Glycogen primer ( )

(d) Glucosidase ( )

7. How many molecules of CO_2 are produced per mole of acetyl-CoA in TCA cycle?

(a) 1 ( )

(b) 2 ( )

(c) 3 ( )

(d) 4 ( )

8. In the pentose phosphate pathway, the major products are

(a) ribulose and NADPH ( )

(b) ribulose and ATP ( )

(c) ribose and NADH ( )

(d) ribose and NAD ( )

9. Fat storing cells of vertebrates are called

(a) hepatocytes ( )

(b) astrocytes ( )

(c) adipocytes ( )

(d) melanocytes ( )

10. Identify the purine base of nucleic acids from the following.

(a) Cytosine ( )

(b) Thymine ( )

(c) Uracil ( )

(d) Adenine ( )

SECTION—B

(*Marks* : 15)

Write short notes on the following : 3×5=15

1. Properties of amino acids

OR

Properties of peptides

2. Coenzyme

OR

Competitive inhibition of enzyme

3. Glycogenesis

OR

Significance of glycolysis

4. Electron transport chain

OR

HMP shunt

5. Ketogenesis

OR

Nucleotides

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The figures in the margin indicate full marks for the questions

1. What are lipids? Describe various types of lipids. Add a note on its significance. 1+7+2=10

OR

Define carbohydrates. Describe the different types of carbohydrates and its significance. 1+7+2=10

2. Discuss the properties and classification of enzymes. 5+5=10

OR

Explain the different types of vitamins and their significance. 5+5=10

3. What do you understand by gluconeogenesis? Describe the process of gluconeogenesis in detail. 1+9=10

OR

What is glycogenolysis? Explain the various steps involved. 1+9=10

4. What is TCA cycle? Describe in detail the TCA cycle. 1+9=10

OR

What is oxidative phosphorylation? Give a detailed note on ATP synthesis. 1+9=10

5. Write a detailed note on account of lipogenesis with its importance. 7+3=10

OR

Explain oxidation of fatty acid in detail. 10

★ ★ ★