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(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. Cholic acid is found in bile in the form of

- (a) sodium salts ()
- (b) calcium salts ()
- (c) liquid ()
- (d) solid ()

2. Amino acids which contain only a single amino and carboxyl group are called

- (a) monoamino dicarboxylic acids ()
- (b) monoamino monocarboxylic acids ()
- (c) diamino monocarboxylic acids ()
- (d) diamino dicarboxylic acids ()

- 3.** A non-protein compound that is necessary for the function of an enzyme is
- (a) holoenzyme ()
 - (b) cofactor ()
 - (c) coenzyme ()
 - (d) apoenzyme ()
- 4.** Ricket-like disease found in adults in India and China is
- (a) hypervitaminosis ()
 - (b) antisterility ()
 - (c) osteomalacia ()
 - (d) osteoporosis ()
- 5.** The formation of glucose or glycogen from non-carbohydrate sources such as fats or proteins is called
- (a) glycogenesis ()
 - (b) glycogenolysis ()
 - (c) glycolysis ()
 - (d) gluconeogenesis ()
- 6.** In glycogenesis, glucose is phosphorylated to
- (a) glucose-2-phosphate ()
 - (b) glucose-4-phosphate ()
 - (c) glucose-6-phosphate ()
 - (d) glucose-8-phosphate ()
- 7.** Which of the following is the prosthetic group of NADH dehydrogenase?
- (a) NADH ()
 - (b) FAD ()
 - (c) NADPH ()
 - (d) FMN ()
- 8.** The enzymes of the TCA cycle in a eukaryotic cell are located in the
- (a) mitochondria ()
 - (b) nucleus ()
 - (c) plasma membrane ()
 - (d) lysosomal bodies ()

9. A nucleoside is composed of
- (a) a base + a sugar ()
 - (b) a base + a phosphate + a sugar ()
 - (c) a base + a phosphate ()
 - (d) None of the above ()

10. Each cycle of β -oxidation produces
- (a) 1 FADH_2 , 1 NAD and 1 acetyl-CoA ()
 - (b) 1 FADH_2 , 1 NADH and 1 acetyl-CoA ()
 - (c) 1 FADH_2 , 1 NADH and 2 CO_2 molecules ()
 - (d) 1 FADH_2 , 1 NAD and 2 CO_2 molecules ()

SECTION—B

(Marks : 15)

Write short notes on the following :

3×5=15

1. Significance of lipids

OR

Properties of amino acids

2. Suicide inhibitor

OR

Properties of vitamin C

3. Gluconeogenesis

OR

Glycogenolysis

4. Enzymes of tricarboxylic cycle

OR

ATP synthase

5. Ketogenesis

OR

Nucleotides

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. What are carbohydrates? Describe the different types of carbohydrates.
Add a note on its significance. 1+7+2=10

OR

Give an account on the properties of peptides. 10

2. Write notes on the following : 5+5=10
(a) Ribozyme
(b) Coenzymes

OR

What are enzymes? Explain Michaelis-Menten equation for enzyme action.
1+9=10

3. What is glycogenesis? Describe the various steps of glycogenesis with their
significance. 1+7+2=10

OR

Describe the process of glycolysis in detail. Add a note on its significance.
8+2=10

4. What is oxidative phosphorylation? Give a detailed note on electron
transport chain. 1+9=10

OR

Give a detailed note on hexose monophosphate shunt system. 10

5. What is urea cycle? Explain the various steps in urea cycle and also
explain how urea cycle is linked with TCA cycle. 1+7+2=10

OR

Give a detailed account on β -oxidation of fatty acids with a well-labelled
flowchart of the mechanism. 10
