2025

(NEP—2020)

(3rd Semester)

HOME SCIENCE (MINOR)

(Biochemistry)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(*Marks* : 10)

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

1. Neuberg for the first time coined the term 'biochemistry' in the year

(a) 1903 ( ) *(b)* 1887 ( )

(c) 1773 ( ) *(d)* 1868 ( )

2. Glucose is a/an

(a) ketose sugar ( ) *(b)* aldose sugar ( )

(c) pentose sugar ( ) *(d)* None of the above ( )

3. Fatty acids with many double bonds are known as

(a) polysaturated ( ) *(b)* polyunsaturated ( )

(c) saturated ( ) *(d)* unsaturated ( )

4. Which of the following is an essential amino acid?

(a) Lysine ( ) *(b)* Alanine ( )

(c) Cysteine ( ) *(d)* Tyrosine ( )

5. The bond which links amino acids is known as

(a) glycosidic bond ( )

(b) peptide bond ( )

(c) covalent bond ( )

(d) phosphodiester bond ( )

6. Lock and key theory was proposed by

(a) Kuhne ( ) *(b)* Daniel Koshland ( )

(c) Emil Fischer ( ) *(d)* J. B. Sumner ( )

7. Which of the following does not influence the enzyme activity?

(a) Temperature ( )

(b) Pressure ( )

(c) pH ( )

(d) Enzyme concentration ( )

8. Conversion of glycogen into glucose is

(a) gluconeogenesis ( ) *(b)* glycolysis ( )

(c) glycogenesis ( ) *(d)* glycogenolysis ( )

9. Glycolysis takes place in the

(a) nucleus ( )

(b) ribosome ( )

(c) mitochondria ( )

(d) endoplasmic reticulum ( )

10. DNA was first discovered in the year 1869 by

(a) Friedrich Miescher ( ) *(b)* Daniel Koshland ( )

(c) Emil Fischer ( ) *(d)* P. S. Laplace ( )

(SECTION : B—SHORT ANSWERS)

(*Marks* : 15)

Answer *five* questions, taking at least *one* from each Unit : 3×5=15

UNIT—I

1. Define biochemistry.

2. Write the biological importances of lipids.

UNIT—II

3. Write a note on peptide bond.

4. Write the differences between essential and non-essential amino acids.

UNIT—III

5. Write a note on isozyme.

6. Write a note on the specificity of enzyme.

UNIT—IV

7. Mention an important function of DNA.

8. What do you mean by glycogenesis?

(SECTION : C—DESCRIPTIVE)

(*Marks* : 50)

Answer *five* questions, taking at least *one* from each Unit : 10×5=50

UNIT—I

1. Classify lipids giving example of each class. 10

2. Discuss the properties and biological importance of carbohydrates. 5+5=10

UNIT—II

3. What are proteins? Classify protein giving example of each class. 2+8=10

4. Discuss the properties and biological importance of proteins. 5+5=10

UNIT—III

5. Classify enzyme giving example of each class. 10

6. What do you mean by enzyme inhibition? Discuss different types of enzyme inhibition. 3+7=10

UNIT—IV

7. What is Krebs' cycle? Discuss various steps involved in Krebs' cycle. 3+7=10

8. Describe various steps involved in glycolysis. 10

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