Reg. No.										

GIET UNIVERSITY, GUNUPUR – 765022

B. Sc. (Ag.) (Third Semester) Regular Examinations, January – 2024

AC-213 - Fundamentals of Plant Biochemistry

Time: 2 hrs | Maximum : 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure. **(0.5 x 10 = 5 Marks)**

a. Enzyme term was coined by _____.
b. Lactose is a disaccharide composed of glucose and _____.
c. Thymine in DNA replaced by _____ pyrimidine base in RNA.
d. The reducing sugars contain a free _____ group.
e. The coiled or folded three-dimensional shape of a protein is called its _____ structure.
f. The process of protein synthesis, where mRNA directs the synthesis of a protein, is called _____.
g. The primary function of triglycerides is _____ storage.
h. Lipids are characterized by their insolubility in _____ but solubility in nonpolar solvents.
i. The simplest monosaccharide, with a three-carbon structure, is called _____.
j. _____ is an example of saturated fatty acid.

Q. 2. Define (or) Explain the following in one or two sentences. **(1 x 5 = 5 Marks)**

a. Enantiomer
b. Glycogenic amino acid
c. Saponification
d. Holoenezyme
e. Nucleoside

Q3. Match the following **(0.5 x 10 = 5 Marks)**

Column – A			Column – B	
(a)	Globular protein		(i)	Dihydroxyuracil
(b)	Unsaturated fatty acid		(ii)	Cellulose
(c)	T-loop		(iii)	Linolenic acid
(d)	Isoelectric point		(iv)	Agar agar
(e)	Homopolysaccharide		(v)	Pseudouracil
(f)	D-Loop		(vi)	Lauric acid
(g)	Heteropolysaccharide		(vii)	Hemoglobin
(h)	Saturated fatty acid		(viii)	Titration
(i)	Fibrous protein		(ix)	Trypsin
(j)	Simple enzyme		(x)	Collagen

Q4. Write True or False against each statement **(0.5 x 10 = 5 Marks)**

a. Peptide bonds link amino acids together in a protein.
b. Polysaccharides are reducing sugars.
c. Tryptophan and tyrosine are aliphatic amino acids.
d. Glycolysis is the process of converting glucose into pyruvate.
e. Proline is an imino acid.
f. Lock and key hypothesis was put forward by Emil Fischer.
g. Omega-3 fatty acids are classified as monounsaturated fatty acids.
h. Z DNA is having a left-handed double helical structure.
i. Lipids are water-soluble molecules.
j. RNA (ribonucleic acid) is typically a double-stranded molecule.

PART – B

Attempt *ANY FIVE* questions. All question carries equal marks **(6 x 5 = 30 Marks)**

5. Discuss the concept of isomerism in monosaccharides, providing example of glucose.
6. Provide an overview of the classification of lipids, emphasizing their roles.
7. List down and describe the various quantitative tests performed in lipids.
8. Elucidate the structure of t- RNA and its diverse functions in protein synthesis.
9. Explore the classification of enzymes based on their functions, providing examples.
10. Explain the hierarchical protein structure from primary to quaternary levels along with a neat labelled diagram.

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