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22BTU103N

PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025

(First Semester)

Branch - **BIOTECHNOLOGY**

CHEMISTRY OF BIOMOLECULES

Time: Three Hours

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

 $(10 \times 1 = 10)$

Maximum: 75 Marks

		ALL questions carry EQUAL marks (10 ×	: 1 = 10)	
Module No.	Question No.	Question	K Level	СО
1	1	a) Proteins b) Lipids c) Carbohydrates d) Mineral salts	K1	CO1
	2	law of thermodynamics is used to understand the concept of energy conservation a) Zeroth b) First c) Second d) Third	K2	CO1
2	3	a) Glucose b) Fructose c) Sucrose d) Dextrose	K1	CO2
	4	groups of substances does not belong to the broad category of carbohydrates? a) Polyhydroxy ketones b) Polyhydroxy carboxylic acids c) Poly amino aldehydes d) Polyhalo aldehydes	K2	CO2
3	5	Which of the following are included in the types of glycolipids? a) N-acetylgalactosamine b) N-acetylglucosamine c) Xylose d) Cerebrosides	K1	CO3
	6	Saponification is hydrolysis a) By alkalis b) In digestive tracts of human beings c) By acids d) By salts	K2	CO3
4	7	Peptide bond is a bond a) Covalent b) Ionic c) Acidic d) Hydrogen	K1	CO4
	8	structure represents the local spatial arrangement of a polypeptide without regard to the conformation of its side chains? a) Primary b) Secondary c) Tertiary d) Quaternary	K2	CO4
5	9	Which of the following food sources has the highest levels of vitamin C? (a) Parsley b) Broccoli c) Black currants d) Orange juice	K1	CO5
	10	Which of the following are not secondary metabolites in plants? a) Rubber, gums b) Morphine, codeine c) Amino acids, glucose d) Alkaloids	K2	CO5

22BTU103N Cont...

SECTION - B (35 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks

 $(5\times7=35)$

Module No.	Question No.	Question	K Level	СО
1	11.a.	Summarize the buffer system of biological fluid		
	(OR)		K3	CO1
	11.b.	Describe water as the biological solvent.		
2	12.a.	Explain the chemical reactions of monosaccharides.	K3	
		(OR)		CO2
	12.b.	Elucidate the properties of lactose and hyaluronic acid.		
3	13.a.	Illustrate the structure and functions of cholesterol.		CO3
		(OR)	K3	
	13.b.	Summarize the structure of DNA as proposed by Watson and Crick.		
. 4	14.a.	Illustrate the structure of essential amino acids.		
	(OR)		K4	CO4
	14.b.	Describe the functions of glycoproteins.		
5	15.a.	Discuss the deficiency manifestation of Vitamin B ₁₂ and K.		CO5
		(OR)	K3	
	15.b.	Elucidate the biological functions of serotonin and terpenes.		

SECTION -C (30 Marks) Answer ANY THREE questions

ALL questions carry EQUAL Marks

 $(3 \times 10 = 30)$

Module No.	Question No.	Question	K Level	СО
1	16	Elaborate the types of chemical bond.	K5	CO1
2	17	Illustrate the structure and importance of storage polysaccharides.	K5	CO2
3	18	Describe the functions of phospholipids and tRNA.	K5	CO3
4	19	Elaborate on the tertiary structure of protein with a suitable example.	K4	CO4
5	20	Explain the functions of insulin and alkaloids.	K5	CO5