22MBU208N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2025
(Second Semester)

Branch – **MICROBIOLOGY**

FUNDAMENTALS OF BIOCHEMISTRY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Water is a _____ a) Polar solvent b) Non polar solvent c) Amphipathic solvent d) Non polar uncharged solvent	K1	CO1
	2	If a solution has to be a buffer, its pH should be _____ a) At its pKa value b) At its Ka value c) At pH 7 d) At pH 14	K2	CO1
2	3	What type of bond connects carbohydrate to proteins in glycoproteins? a) Ionic bond b) Covalent bond c) Hydrogen bond d) Peptide bond	K1	CO2
	4	The glycosidic bond between galactose and glucose in lactose is _____ a) α(1-4) b) β (1-4) c) α(1-6) d) β (1-6)	K2	CO2
3	5	The nitrogenous base present in lecithin is_____ a) Choline b) Ethanolamine c) Inositol d) Serine	K1	CO3
	6	The functionally active form of vitamin D is a) Cholecalciferol b) Ergocalciferol c) Dehydro cholesterol d) Calcitriol	K2	CO3
4	7	Which of the following is not an essential amino acid? a) Proline b) Histidine c) Leucine d) Methionine	K1	CO4
	8	The number of base pairs in each turn of B -DNA is a) 9 b) 10 c) 11 d) 12	K2	CO4
5	9	Pepsin belongs to which of the following class of enzymes? a) Oxidoreductases b) Transferases c) Hydrolases d) Ligases	K1	CO5
	10	The serum enzyme elevated in obstructive jaundice is_____ a) Alkaline phosphatase b) Aspartate transaminase c) Amylase d) Lactate dehydrogenase	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Justify "Water as biological solvent"	K2	CO1
		(OR)		
	11.b.	Explain H bond formation in biomolecules with example.		
2	12.a.	What are reducing disaccharides? Explain their structure with two examples.	K2	CO2
		(OR)		
	12.b.	What are homopolysaccharides? Compare the structure of starch and cellulose.		
3	13.a.	Classify the compound lipids.	K2	CO3
		(OR)		
	13.b.	Bring out the biological functions of vitamin A.		
4	14.a.	Discuss about the weak forces of interaction exist in protein structure.	K2	CO4
		(OR)		
	14.b.	Elucidate the properties of amino acids.		
5	15.a.	Enumerate the characteristic features of active site structure.	K2	CO5
		(OR)		
	15.b.	Discuss about the clinical significance of ALT and AST.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Determine the pH of a solution using glass electrode.	K2	CO1
2	17	Elucidate the structure and functions of mucopolysaccharides.	K2	CO2
3	18	Explain the fluid mosaic model of cell membrane structure.	K2	CO3
4	19	Describe the Watson and Crick model of DNA structure.	K2	CO4
5	20	Classify the enzymes according to International Unit of Biochemistry.	K2	CO5

Z-Z-Z END