22MBU208N/ 22MBU208/ 18MBU07

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024

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	How many H bonds can a water molecule form at a time? a)1 b) 2 c) 3 d) 4	K1	CO1
	2	Buffers are mixtures of a) Strong acid and strong base b) Strong acid and weak base c) Weak acid and its conjugate base d) Weak base and its conjugate acid	K2	CO1
2	3	Which one of the following is a non-reducing sugar? a) Glucose b) Fructose c) Sucrose d) Maltose	K1	CO2
	4	Where is chondroitin sulfate found in the body? a) In nervous system b) In bloodstream c) In the liver d) In cartilage and connective tissues	K2	CO2
3	5	Phospholipids are also called as_____ a) Simple lipids b) Derived lipids c) Storage lipids d) Membrane lipids	K1	CO3
	6	The vitamin synthesized by only microorganisms is a) Vitamin B_{12} b) Vitamin B_1 c) Vitamin B_2 d) Vitamin A	K2	CO3
4	7	Among the standard 20 amino acids which one is least occur in proteins? a) Glycine b) Alanine c) Tryptophan d) Methionine	K1	CO4
	8	The back bone of nucleic acid structure is constructed by _____ a) Peptide bonds b) Glycosidic bonds c) Phosphodiester bonds d) All of them	K2	CO4
5	9	In the feedback regulation the end product binds at _____ a) Active site b) Allosteric site c) E-S complex d) None of these	K1	CO5
	10	The serum enzyme elevated in viral hepatitis is_____ a) Alanine transaminase b) Aspartate transaminase c) Alcohol dehydrogenase d) Gamma glutamyl transpeptidase	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.	Discuss on elements present in macro molecules.	K2	CO1
		(OR)		
	11.b.	Enumerate the unique properties of water.		
2	12.a.	What are anomers? Explain mutarotation with example.	K2	CO2
		(OR)		
	12.b.	What are glycosaminoglycans? Show the N- glycosidic and O- glycosidic bond formation.		
3	13.a.	Classify fatty acids. Explain their structure with suitable examples.	K2	CO3
		(OR)		
	13.b.	Discuss the role of vitamin D in bone health.		
4	14.a.	Compare fibrous proteins and globular proteins.	K2	CO4
		(OR)		
	14.b.	Classify amino acids based on their R groups.		
5	15.a.	Explain feedback inhibition of enzyme activity with example.	K2	CO5
		(OR)		
	15.b.	Discuss about the clinical significance of ALP and ACP.		

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	Describe the role of blood buffers in acid- base balance.	K2	CO1
2	17	Describe the classification of carbohydrates based on their reducing property.	K2	CO2
3	18	What are steroids? Explain the structure and functions of cholesterol.	K2	CO3
4	19	Sketch the structure and describe the functions of three types of RNA.	K2	CO4
5	20	Derive Michaelis-Menton equation for single substrate enzyme catalyzed reaction.	K2	CO5

Z-Z-Z END