

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION DECEMBER 2024
(First Semester)**

Branch - **BIOTECHNOLOGY**

CHEMISTRY OF BIOMOLECULES

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	Which one of them is the weakest? a) Ionic bond b) Covalent bond c) Metallic Bond d) van der Waals force	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	----- class of carbohydrates is considered as non-sugar? a) Monosaccharides b) Disaccharides c) Oligosaccharides d) Polysaccharides	K1	CO2
	4	If OH group is to left of last stereocenter carbon than configuration is ----- a) D b) L c) α d) β	K2	CO2
3	5	In prokaryotic organisms, nuclear region is not surrounded by a membrane. This undefined nuclear region is known as ----- a) Nucleic acid b) Nucleoid c) Nucleolus d) None of the above	K1	CO3
	6	----- is an example of fats a) Glyceryl trioleate b) Vegetable ghee c) Coconut oil d) Groundnut oil	K2	CO3
4	7	-----is not a classified form of conjugated proteins a) Lipoproteins b) Glycoproteins c) Metalloproteins d) Complete proteins	K1	CO4
	8	Peptide bond is a ----- bond a) Covalent b) Ionic c) Acidic d) Hydrogen	K2	CO4
5	9	Which of the following vitamins serves as a hormone precursor? a) Vitamin A b) Vitamin C c) Vitamin D d) Vitamin K	K1	CO5
	10	Which alkaloid is commonly used as a local anesthetic? a) Morphine b) Quinine c) Cocaine d) Ephedrine	K2	CO5

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.	Summarize the types of chemical bonding.	K3	CO1
		(OR)		
	11.b.	Describe the properties of water.		

Cont...

2	12.a.	Explain the chemical reactions of monosaccharides.	K3	CO2
	(OR)			
	12.b.	Elucidate the structure and properties of sucrose.		
3	13.a.	List out the chemical reactions of fatty acids.	K3	CO3
	(OR)			
	13.b.	Summarize the biological functions of phospholipids.		
4	14.a.	Describe the functions of glycoproteins.	K4	CO4
	(OR)			
	14.b.	Illustrate the structure of aromatic and basic amino acids.		
5	15.a.	Discuss the deficiency manifestation of Vitamin K and C.	K3	CO5
	(OR)			
	15.b.	Elucidate the biological functions of dopamine and GABA.		

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	Elaborate the buffer system of biological fluid.	K6	CO1
2	17	Discuss glycogen and hyaluronic acid.	K5	CO2
3	18	Compare and contrast between DNA and RNA.	K5	CO3
4	19	Elaborate on the secondary structure of protein with a suitable example.	K4	CO4
5	20	Explain the functions of insulin and flavonoids.	K5	CO5

Z-Z-Z

END