

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

**BSc DEGREE EXAMINATION DECEMBER 2025
(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	Select the Bond angles in water a) 120° b) 109.5° c) 87.5° d) 104.5°	K1	CO1
	2	Find out the composition of a Buffer Solution a) weak acid b) strong acid c) Weak Base d) Weak acid & its Conjugate Base	K2	CO1
2	3	Choose the non-reducing sugar a) Sucrose b) Xylose c) Glucose d) Fructose	K1	CO2
	4	Which is the unbranched linear component of Starch? a) Amylose b) Amylopectin c) Cellulose d) Cellobiose	K2	CO2
3	5	State the number of double bonds present in linolenic acid a) 1 b) 2 c) 3 d) 4	K1	CO3
	6	Which one of the following is the most abundant type of RNA? a) mRNA b) rRNA c) tRNA d) Viral RNA	K2	CO3
4	7	Which of the following is an essential amino acid? a) Cysteine b) Asparagine c) Glutamine d) Phenylalanine	K1	CO4
	8	Which of the following describes the overall three dimensional folding of the polypeptide? a) Primary structure b) Quaternary structure c) Secondary structure d) Tertiary structure	K2	CO4
5	9	Name the deficiency disease caused by vitamin B1 (Thiamine)? a) Xerophthamia b) Convulsions c) Beri beri d) Rickets	K1	CO5
	10	Name the type of bonds that connect the polypeptide chains in insulin a) Ionic b) Covalent c) Disulphide d) Hydrophobic interactions.	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 the types of chemical bonds with suitable example.	K3	CO1
		(OR)		
	11.b.	Water is an Universal Solvent-Justify.		
2	12.a.	Elaborate on the classification of Monosaccharides.	K2	CO2
		(OR)		
	12.b.	Describe the structure and properties of any one non reducing sugar		
3	13.a.	Write a note on the structure and functions of Cholesterol	K2	CO3
		(OR)		
	13.b.	Give an account on the structure of Double helical DNA.		
4	14.a.	Classify aminoacids by its side chain	K2	CO4
		(OR)		
	14.b.	Describe the structure of Peptide bond and specify the biological importance of peptides.		
5	15.a.	Outline the sources and functions of Thiamin	K2	CO5
		(OR)		
	15.b.	Describe the structure and functions of 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	Brief out on Buffer systems of biological fluid	K2	CO1
2	17	Describe the structure and properties of Starch and Glycogen	K2	CO2
3	18	Elaborate on the classification of lipids	K3	CO3
4	19	Discuss the structural organization of proteins.	K3	CO4
5	20	Write the sources, functions and deficiency manifestations of Vitamin C	K2	CO5

Z-Z-Z END