

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025  
(First Semester)

Branch - BIOCHEMISTRY

**STRUCTURAL 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	Which of the following bond is formed by the complete transfer of electrons? a) Covalent bond                      b) Ionic bond c) Metallic bond                      d) Hydrogen bond	K1	CO 1
	2	Which of the following is a nucleophile? a) BF <sub>3</sub> b) H <sup>+</sup> c) NH <sub>3</sub> d) AlCl <sub>3</sub>	K2	CO 1
2	3	Mention the storage form of polysaccharide in animals a) Starch                      b) Glycogen c) Cellulose                      d) Inulin	K1	CO 2
	4	Find the ketose sugar a) Glucose                      b) Fructose c) Galactose                      d) Mannose	K2	CO 2
3	5	Which functional groups are present in all amino acids? a) Hydroxyl and methyl                      b) Amino and carboxyl c) Carbonyl and sulphydryl                      d) Phosphate and amino	K1	CO 3
	6	Mention the conjugated protein from the following a) Albumin                      b) Globulin c) Hemoglobin                      d) Insulin	K2	CO 3
4	7	Identify the simple lipid a) Phospholipid                      b) Triglyceride c) Glycolipid                      d) Lipoprotein	K1	CO 4
	8	Which mineral is the major component of bones and teeth? a) Sodium                      b) Potassium c) Calcium                      d) Magnesium	K2	CO 4
5	9	Which of the following is NOT a pyrimidine base? a) Cytosine                      b) Thymine c) Uracil                      d) Adenine	K1	CO 5
	10	Tick the sugar found in RNA a) Deoxyribose                      b) Ribose c) Glucose                      d) Fructose	K2	CO 5

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.	What are covalent bonds? Explain.	K1	CO1
	(OR)			
	11.b.	Explain the oxido reduction reaction.		
2	12.a.	Describe the structure and properties of disaccharides.	K2	CO2
	(OR)			
	12.b.	Classify the polysaccharides.		
3	13.a.	Sketch the structure of peptide bond and mention their biological importance.	K3	CO3
	(OR)			
	13.b.	Comment on the significance of protein denaturation.		
4	14.a.	List out the general properties of lipids.	K4	CO4
	(OR)			
	14.b.	Simplify the sources, functions and deficiency manifestations of Calcium, Phosphorous and Iron.		
5	15.a.	Explain the chemical components of DNA.	K5	CO5
	(OR)			
	15.b.	Elaborate the denaturation and renaturation properties of DNA.		

**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	Discuss the general steps of electrophilic mechanism with example.	K1	CO1
2	17	Narrate the structure and functions of starch.	K2	CO2
3	18	Classify the amino acids based on their chemical nature.	K3	CO3
4	19	Enumerate the sources, functions and deficiency symptoms of fat-soluble vitamins.	K4	CO4
5	20	Compile the features of A, B and Z forms of DNA.	K5	CO5

Z-Z-Z

END