

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_3 b) H^+ c) NH_3 d) AlCl_3	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

 $(5 \times 7 = 35)$

Module No.	Question No.	Question	K Level	CO
1	11.a.	What are covalent bonds? Explain.	K1	CO1
		(OR)		
2	11.b.	Explain the oxido reduction reaction.	K2	CO2
	12.a.	Describe the structure and properties of disaccharides.		
3		(OR)	K3	CO3
	12.b.	Classify the polysaccharides.		
	13.a.	Sketch the structure of peptide bond and mention their biological importance.		
4		(OR)	K4	CO4
	13.b.	Comment on the significance of protein denaturation.		
	14.a.	List out the general properties of lipids.		
5		(OR)	K5	CO5
	14.b.	Simplify the sources, functions and deficiency manifestations of Calcium, Phosphorous and Iron.		
	15.a.	Explain the chemical components of DNA.		
		(OR)		
	15.b.	Elaborate the denaturation and renaturation properties of DNA.		

SECTION - C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

 $(3 \times 10 = 30)$

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