

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

BSc DEGREE EXAMINATION MAY 2026

Branch – **NUTRITION, FOOD SERVICE MANAGEMENT AND DIETETICS**

CHEMISTRY - I

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	List two examples of primary standards used in volumetric analysis. a) NaOH, HCl b) K ₂ Cr ₂ O ₇ , Na ₂ S ₂ O ₃ c) Oxalic acid, KHP (Potassium hydrogen phthalate) d) HCl, H ₂ SO ₄	K1	CO1
	2	Interpret the significance of using a primary standard like KHP (Potassium hydrogen phthalate) in acid-base titrations. a) High purity and stability b) Low solubility in water c) Highly reactive d) Cheap reagent	K2	CO1
2	3	Find the type of bond typically formed between a metal and a non-metal like sodium and chlorine. a) Covalent bond b) Ionic bond c) Hydrogen bond d) Coordinate bond	K1	CO2
	4	Show an example of a Lewis acid. a) NH ₃ b) H ₂ O c) BF ₃ d) OH ⁻	K2	CO2
3	5	How are amino acids like glycine typically classified? a) By molecular weight only b) Based on side chain properties (polar, nonpolar) c) By solubility in water d) By color	K1	CO3
	6	Interpret the meaning of denaturation of proteins. a) Loss of native structure leading to loss of function b) Gain of new structure c) Increase in biological activity d) Change to primary structure only	K2	CO3
4	7	List two examples of anesthetics. a) Lidocaine, Procaine b) Aspirin, Paracetamol c) Penicillin, Streptomycin d) Diazepam, Lorazepam	K1	CO4
	8	Classify dyes based on their application. a) Acid dyes, basic dyes, direct dyes b) Only azo dyes c) Only natural dyes d) Only synthetic dyes	K2	CO4
5	9	Name the law relating absorbance of light to concentration of a solution. a) Beer's law b) Lambert's law c) Boyle's law d) Charles' law	K1	CO5
	10	Summarize the significance of pH in living systems. a) pH affects enzyme activity and biological processes b) pH has no biological role c) pH only affects taste d) pH determines color of organisms	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.	Plan a simple first aid response for laboratory accidents involving chemical splashes to the eyes.	K3	CO1
		(OR)		
	11.b.	Organize the different types of titrations with examples and their principles.		
2	12.a.	List out the distinguishing properties of covalent compounds like CH ₄ compared to ionic compounds like NaCl.	K4	CO2
		(OR)		
	12.b.	Discuss about the applications of Lewis acid-base theory.		
3	13.a.	Evaluate the importance of amino acids like alanine in biological systems and their preparation methods.	K4	CO3
		(OR)		
	13.b.	Examine the causes and effects of denaturation of proteins.		
4	14.a.	List out the function of analgesics like aspirin in pain management and their common uses.	K4	CO4
		(OR)		
	14.b.	Discover the role of chromophores and auxochromes in determining the color properties of dyes.		
5	15.a.	Categorize various concentration expressions for different applications.	K6	CO5
		(OR)		
	15.b.	Propose the differences between fluorescence and phosphorescence in terms of emission processes.		

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	Appraise the critical aspects of laboratory safety protocols for handling highly toxic chemicals such as cyanides and suggest measures for accident prevention in an analytical chemistry lab.	K5	CO1
2	17	Estimate the significance of ionic bonding in determining the physical properties and structures of compounds like sodium chloride (NaCl) and magnesium oxide (MgO).	K6	CO2
3	18	Discuss the behind studying the structure-activity relationships of enzymes in biochemical processes.	K6	CO3
4	19	Compile the classification of dyes based on their chemical structure.	K6	CO4
5	20	Elaborate the Langmuir and Freundlich adsorption isotherms and their examples relevant to industrial and environmental processes.	K6	CO5

Z-Z-Z

END