

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

**BSc DEGREE EXAMINATION DECEMBER 2025
(Third Semester)**

Branch- MICROBIOLOGY

CHEMISTRY FOR MICROBIOLOGY

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	Identify the distillation method for liquids with very high boiling points or those that decompose at their boiling points. a) Distillation under reduced pressure b) Steam distillation c) Fractional distillation d) Counter-current distribution	K1	CO1
	2	Which of the following is a principle of green chemistry? a) Design for toxicity b) Use renewable energy sources c) Prevent waste d) All of the above	K2	CO1
2	3	Select a fat-soluble vitamin? a) Vitamin C b) Vitamin B12 c) Vitamin D d) Vitamin B6	K1	CO2
	4	Cyclohexane exists primarily in the: a) Boat conformation b) Chair conformation c) Planar conformation d) Eclipsed conformation	K2	CO2
3	5	Which of the following fertilizers is natural organic? a) Urea b) Compost c) Ammonium nitrate d) Triple super phosphate	K1	CO3
	6	What is Triple Super Phosphate (TSP) ? a) Potassium nitrate b) Calcium phosphate c) Sodium phosphate d) Ammonium sulfate	K2	CO3
4	7	What is the primary role of enzymes in detergents? a) Bleach clothes b) Remove protein-based stains c) Soften water d) Reduce static electricity	K1	CO4
	8	Select a non-ionic detergent. a) Sodium stearate b) Lauryl alcohol ethoxylate c) Ammonium lauryl sulfate d) Calcium dodecyl benzenesulfonate	K2	CO4
5	9	What is the primary purpose of tanning in leather production? a) Soften the hide b) Preserve the leather from decay c) Remove hair from the hide d) Color the leather	K1	CO5
	10	Which of the following is an example of a synthetic resin adhesive? a) Epoxy resin b) Animal glue c) Starch paste d) Silicate cement	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.	Explain the method of distillation under reduced pressure.	K2	CO1
		(OR)		
	11.b.	Discuss Nanochemistry with an example.		
2	12.a.	Write a note on water-soluble vitamins and their role in the human body.	K3	CO2
		(OR)		
	12.b.	Describe the conformations of ethane and account for its stability.		
3	13.a.	Discuss the need of fertilizers for plant growth.	K3	CO3
		(OR)		
	13.b.	Explain the classification of insecticides based on their mode of action.		
4	14.a.	Briefly explain the preparation and uses of vanilla extract.	K3	CO4
		(OR)		
	14.b.	Discuss the biological applications of nitrocellulose.		
5	15.a.	Explain the steps involved in the preparation of hides.	K3	CO5
		(OR)		
	15.b.	Describe the structure and industrial uses of silicate adhesives.		

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	Explain Fractional distillation 2 steam distillation methods for the purification of liquids.	K3	CO1
2	17	Explain the chair and boat forms of cyclohexane.	K4	CO2
3	18	Classify fertilizers based on their chemical nature and nutrient composition.	K3	CO3
4	19	Explain the polymerization process used in the production of polyurethane.	K4	CO4
5	20	Classify adhesives based on their chemical composition and give examples of each.	K3	CO5

Z-Z-Z END