

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2026
(Fifth Semester)

Branch - CHEMISTRY

MAJOR ELECTIVE COURSE – I POLYMER CHEMISTRY

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	In the word polymer, mer means _____. a) many b) part c) weight d) size	K1	CO1
	2	Which group of halides present in Zeigler Natta catalyst? a) I b) II c) III d) IV	K2	CO1
2	3	Find the water soluble initiator used in emulsion system. a) H ₂ O ₂ b) H ₂ O c) NH ₃ d) CH ₄	K1	CO2
	4	_____ viscosity is also known as Staudinger index. a) Relative b) Specific c) Inherent d) Intrinsic	K2	CO2
3	5	Identify the plasticizer used to decrease the T _g value of PVC? a) Dibutyl phthalate b) Sorbitol c) Caproic acid d) Water	K1	CO3
	6	What is the primary factor that increases the tensile strength of a polymer? a) Low molecular weight b) Presence of weak intermolecular forces c) Cross linking between molecular chains d) High degree of branching	K2	CO3
4	7	_____ undergoes rapid saponification with alkalis or acids to produce polyvinyl alcohol. a) Polyvinyl acetate b) PMMA c) Polyester d) Polyurethane	K1	CO4
	8	Which polymer is formed using phenol with formaldehyde? a) Bakelite b) Buna c) Neoprene d) Teflon	K2	CO4
5	9	Name the ingredient incorporated into polymer prior to spinning? a) Stabilizer b) Antioxidant b) c) Colorants d) Retardants	K1	CO5
	10	Select the moulding technique to produce hollow plastic articles. a) Compression b) Blow b) c) Injection d) Extrusion	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.	Summarize the types of polymerization.	K2	CO1
	(OR)			
	11.b.	Infer the mechanism of condensation polymerization.		
2	12.a.	Explain degree of polymerization.	K5	CO2
	(OR)			
	12.b.	Determine molecular weight of polymers by light scattering method.		
3	13.a.	Propose stress strain relationship.	K6	CO3
	(OR)			
	13.b.	Compile the factors affecting T _g .		
4	14.a.	List out the preparation and properties of cellulose acetate.	K4	CO4
	(OR)			
	14.b.	Compare thermoplastics and thermosetting plastics.		
5	15.a.	Elaborate any two moulding techniques.	K6	CO5
	(OR)			
	15.b.	Discuss the recycling of polymers.		

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	Propose the mechanism of free radical polymerization.	K6	CO1
2	17	Determine molecular weight of polymers by cryoscopy and viscometry methods.	K5	CO2
3	18	Predict the stereochemistry of polymers.	K6	CO3
4	19	Explain the preparation, properties and uses of Buna-S and Buna-N rubber.	K5	CO4
5	20	Compile the polymer additives with definition and examples.	K6	CO5

Z-Z-Z

END