Reg. No. | | | | | | | | |

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.

(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., CHEMISTRY

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART - III	CORE ELECTIVE	U21CH6E2A	POLYMER CHEMISTRY

Date & Session: 29.04.2025/FN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	Natural rubber is a polymer of ----------. a) styrene b) isoprene c) chloroprene d) 1,3-butadiene
CO1	K2	2.	If the substituent groups in a polymer lie alternately above and below the plane, the configuration is called ----------. a) atactic b) syndiotactic c) zig-zag d) isotactic
CO2	K1	3.	Poly vinyl chloride polymer is prepared from the monomer ----------. a) ethelene b) propelene c) styrene d) vinyl chloride
CO2	K2	4.	Synthetic polymer which resembles natural rubber is----------. a) neoprene b) chloroprene c) glyptal d) nylon
CO3	K1	5.	PVC is ---------. a) poly vinyl carbonate b) poly vinyl chloride c) poly vinyl styrene d) propelene choride
CO3	K2	6.	Which one of the following is a biodegradable polymer? a) vinyon b) Dacron c) PHBV d) polyester
CO4	K1	7.	Predict the role of polymer as an adhesive. a) binding agent b) separating agent c) heating agent d) densing agent
CO4	K2	8.	Bakelite is a --------- polymer. a) hard b) infusible c) resistant d) all of these
CO5	K1	9.	Choose the polymer, which is applied in everyday life. a) PVC b) rubber c) polyester d) all of these
CO5	K2	10.	Abbreviation for Tg is _____ a) hardening temperature b) fusible temperature c) cooling temperature d) glass transition temperature
Course Outcome	**Bloom's K-level**	**Q. No.**	**SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Find the monomers of the following. i) polyethene ii) polyacetylene iii) polystyrene iv) polypropylene v) polycarbonate
			(OR)
CO1	K3	11b.	Use the method of Moulding techniques in polymerization process.

CO2	K3	12a.	Discuss the synthetic preparation and application of epoxy resin and nylon. **(OR)**
CO2	K3	12b.	Elaborate the importance of glass transition temperature.
CO3	K4	13a.	How will you prepare Nylon-6,6 and Polyester? **(OR)**
CO3	K4	13b.	Analyse the advancements of biomedical polymer.
CO4	K4	14a.	Compare free radical and ionic polymerization. **(OR)**
CO4	K4	14b.	Differentiate between natural and synthetic rubber.
CO5	K5	15a.	Interpret the polymer degradation methods. **(OR)**
CO5	K5	15b.	Evaluate the mechanism of condensation polymerisation or addition polymerisation.

Course Outcome	**Bloom's K-level**	**Q. No.**	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	Describe the drawbacks and uses of natural rubber**.** **(OR)**
CO1	K3	16b.	Discuss the applications of fire resistant polymers.
CO2	K4	17a.	How will you prepare the following? i) polyethylene ii) polypropylene iii) polystyrene **(OR)**
CO2	K4	17b.	Illustrate the process of vulcanization of rubber.
CO3	K4	18a.	Analyze the factors affecting Tg. **(OR)**
CO3	K4	18b.	Differentiate between Thermoplastics and thermosetting plastics.
CO4	K5	19a.	Justify your views on the polymer processing methods. **(OR)**
CO4	K5	19b.	Estimate the molar mass of macromolecules by number average, weight average and sedimentation method.
CO5	K5	20a.	Compile the types of polymerization with suitable examples. **(OR)**
CO5	K5	20b.	Explain the formation of following polymers: (i) urea-HCHO polymerization (ii) PVC (iii) phenol-HCHO polymerization