(NO. OF PAGES: 2)

(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2022 ONLY)

SUB CODE 22UCY614

REG.NO. :

N.G.M. COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY-2025

B.Sc CHEMISTRY **MAXIMUM MARKS: 50**

SEMESTER:VI **TIME: 3 HOURS**

PART - III

22UCY614 –POLYMER CHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.(K1)

1. Which of the following is a thermosetting polymer?

(a) polystyrene (b) polyolefins (c) nylons (d) phenolic resins

2. Which of the following is true for the resultant polymer product formed, when molecules of phthalic acid react with molecules of glycerol?

(a) branch polymer (b) cross-link polymer (c) linear polymer (d) none of the mentioned

3. Which of the following types of polymers is not based on the classification by the source?

(a) Natural (b) Semi-synthetic (c) Elastomers (d) Synthetic

4. _____ consist of individual polymers with varying molecular weights. The properties of the polymers depend on the distribution of molecular weights.

(a) Monodisperse (b) Polydispersity (c) Cellulose chain (d) Synthetic polymer

5. Which among the following polymers have lowest solubility?

(a) polyethylene (b) polystyrene (c) nylon 6 (d) epoxy resin

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. On the basis of mode of formation polymers can be classified ----------

7. What is homopolymer?

8. What is the range of tensile strength, exhibited by fibres?

9. The _____ is always higher than the number average molecular weight, except for the special case when they are equal if all of the polymers have the exact same molecular weight.

10. Which kind of polymers are known for their high crystallinity?

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SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Compare between thermoplastic and thermosetting polymer.

(OR)

b) Infer Emulsion Polymerization.

12. a) List out the types of polymerization reactions.

(OR)

b) Propose the importance of Copolymerization.

13. a) Define the terms (i) Isotactic (ii) syndiotactic

(OR)

b) What are the factors that affecting Tg?

14. a). Explain viscosity average molecular weight.

(OR)

b) List out the applications of polymers in molecular weight determination.

15. a) Compile a note on calendaring process.

(OR)

b) Build the preparation of Teflon.

SECTION – C (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K4 (Or) K5)

16. a). Discuss about degree of polymerization.

(OR)

b) Create a note on fibres**.**

17. a) Compare between anionic and cationic polymerizations.

(OR)

b) Make a note on Graft copolymers.

18. a) Explain Zeigler-Natta catalysts.

(OR)

b) Elaborate about polymer additives.

19. a) Write a note on molecular weight determination by GPC method?

(OR)

b) Determine the average molecular weight by Osmotic pressure method.

20. a) Give an account on importance of biopolymers

(OR)

b) propose the preparation and uses of Nylon-6 and Nylon 66.

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ETHICAL PAPER