

QP CODE: 25020404

Reg No	:	
Name	:	

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE / MERCY CHANCE EXAMINATIONS, FEBRUARY 2025

Sixth Semester

CHOICE BASED CORE COURSE - CH6CBT01 - POLYMER CHEMISTRY

Common for B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc Chemistry Model III Petrochemicals

2017 Admission Onwards

DE64AE4C

Time: 3 Hours

Max. Marks : 80

Part A

Answer any ten questions.

Each question carries **2** marks.

- 1. Differentiate between natural polymers and synthetic polymers.
- 2. What are copolymers? Give two examples.
- 3. Give any four advantages of Group transfer polymerisation.
- 4. What is Flory equation?
- 5. Why branching of polymers prevent crystallization?
- 6. What is number average molecular weight?
- 7. What are ozonolysis reactions?
- 8. What is meant by calendering?
- 9. What is LDPE ? How it is obtained?
- 10. What are polyesters?
- 11. Give the limitations of polycarbonate.
- 12. Classify the different types of carbon nanotubes.

(10×2=20)

Part B

Answer any **six** questions. Each question carries **5** marks.

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- 13. Differentiate between addition polymerisation and condensation polymerisation.
- 14. What is the effect of polymer composition and structure of polymers?
- 15. How geometry and rigidity affect the glass transition temperature?
- 16. Discuss on cyclisation reactions.
- 17. Explain the term mechanical degradation.
- 18. Give examples of vinyl polymers, its method of preparation and applications.
- 19. Differentiate Nylon-6 from Nylon 6,6
- 20. Briefly describe Flame retardant polymers.
- 21. What are conducting polymers? Explain with suitable examples.

(6×5=30)

Part C

Answer any two questions.

Each question carries **15** marks.

- 22. Explain the mechanism of the following:
 - (a) Free radical polymerisation
 - (b) Anionic polymerisation
 - (c) Cationic polymerisation
- 23. Explain the following techniques of polymerisation:
 - (a) Bulk polymerisation
 - (b) Suspension polymerisation
 - (c) Emulsion polymerisation

24. What is crystallisation? What are the different methods of crystallisation mechanisms?

- 25. Briefly explain the following with examples
 - a) Fluorocarbon Polymers
 - b) Polymeric Drugs
 - c) PDMS

(2×15=30)

