D6BCH2305 **Reg. No.....**

Name: .....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2026

(Regular/Improvement/Supplementary)

CHEMISTRY

GCHE6E02T: POLYMER CHEMISTRY

Time: 2 Hours **Maximum Marks: 60**

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 marks)

1. Explain the viscoelastic behaviour of polymers?
2. Name a polymer used as a substitute for blood plasma. Justify your answer.
3. What is the relation between molecular weight and degree of polymerization?
4. What are the advantages of interfacial polycondensation polymerization over other polymerization techniques?
5. How is nylon 6/6 prepared?
6. How does processing affect polymers?
7. Define tacticity. What is its significance?
8. Explain the concept of ring opening in polymerization.
9. What is meant by the glass transition temperature of a polymer? What are the factors affecting the glass transition temperature of polymers?
10. What is the role of dopping in preparing conducting polymers?
11. What is Teflon? Mention any two applications.
12. Name a synthetic resin, and outline its method of preparation.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 marks)

13. How are polymers classified based on their structure?
14. Discuss the different steps involved in the recycling of plastics.
15. Briefly explain the mechanism of Zeigler Natta polymerization. What are its advantages?
16. Write a note on any two polymer processing techniques.
17. Give the preparation, properties and uses of any two synthetic rubbers.
18. Discuss briefly any two polymer degradation methods.
19. Define viscosity average molecular weight and suggest a method for its determination.

SECTION C: Answer any *one* question. The question carries *ten* marks.

20. Compare the mechanism of free radical, ionic and coordination polymerizations.
21. Discuss briefly any four polymerization techniques.

(1 × 10 = 10 Marks)