D 140108 **(Pages : 2)** **Name.....**

Reg. No.....

SIXTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2026

Chemistry

CHE 6B 13 (E2)—POLYMER CHEMISTRY

(2020 Admission onwards)

Time : Two Hours Maximum : 60 Marks

Section A (Short Answers)

Answer questions up to 20 *marks.*
Each question carries 2 *marks.*

1. Bring out the difference between thermos and thermosetting plastics. Give one example.
2. What is group transfer polymerization ?
3. What is meant by the degree of polymerization ?
4. What is glass transition temperature ? Give its importance.
5. What is melt condensation polymerization ?
6. Write a short note on viscoelasticity of polymers.
7. Give the monomers and applications of SBR.
8. List one fluoro polymer. Give its method of synthesis and one application.
9. Give two examples of recycling plastics.
10. Give the structure and applications of vulcanized rubber.
11. Differentiate between high-density and low-density polyethylene.
12. What is Tacticity ?

(Ceiling of marks : 20)

Turn over

Section B (Paragraph)

Answer questions up to 30 *marks.*
Each question carries 5 *marks.*

13. Explain Zeigler-Natta polymerization with the mechanism. Give its advantages.
14. Distinguish between the number average and weight average molecular weight of a polymer.
15. Explain a) solution polymerization ; and b) emulsion polymerization.
16. Write short notes on calendering and thermoforming.
17. What are the different types of acrylic polymers ? How is it prepared ?
18. Differentiate between chain and step-growth polymerization.
19. Define a) interfacial polycondensation polymerization and ; and b) Bulk polymerization.

(Ceiling of marks : 30)

Section C (Essay)

Answer any **one** *question.*
The question carries 10 *marks.*

20. a) Briefly discuss the free radical mechanism of polymerization of ethene. (5 marks)

    b) Briefly discuss different types of polymer degradation. (5 marks)

21. a) Explain :

        i) Compression moulding ; and

        ii) Rotational molding.

    (5 marks)

    b) Give the monomer and applications of :

        i) Nylon 66 ;

        ii) Lexan ; and

        iii) Polyester.

    (5 marks)

[1 × 10 = 10 marks]