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Name.....

Reg. No.....

**SIXTH SEMESTER U.G. (CBCSS—UG) DEGREE EXAMINATION  
MARCH 2024**

Chemistry

CHE 6B 13 (E2)—POLYMER CHEMISTRY

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

**Section A (Short Answers)***Answer questions up to 20 marks.**Each question carries 2 marks.*

1. What are copolymers ? Give one example.
2. What is group transfer polymerisation ?
3. What do you understand by sedimentation average molecular weight ?
4. What is degree of polymerization ? How it is related to molecular weight of the polymer ?
5. What is unzipping of polymers ?
6. What do you understand by interfacial poly condensation polymerisation ?
7. Comment on the classification of polymers based on their structure.
8. Which catalyst is used in Zeigler-Natta polymerisation ? Write any *two* advantages of this polymerisation process.
9. Anionic polymerisation is known as living polymerisation. Why ?
10. Write the structural formula of PMMA and PAN.
11. How NR and Silicone rubber differ in vulcanisation process ?
12. What is meant by conducting polymer ? Give an example.

(Ceiling of marks : 20)

**Turn over**

**Section B (Paragraph)**

*Answer questions up to 30 marks.*

*Each question carries 5 marks.*

13. Write short notes on blow moulding and thermoforming.
14. Write a short note on emulsion polymerization.
15. What is the significance of average molecular mass for polymers? Describe the concept of number average and weight average molecular mass.
16. What is glass transition temperature ( $T_g$ )? Write any *two* factors affecting ( $T_g$ ).
17. Explain : (a) Solution polymerization ; and (b) Suspension polymerization.
18. Comment on the preparation, structure, properties and applications of HDPE and LDPE.
19. What are recycling codes of plastics? Explain with suitable examples. What is the significance of recycling?

(Ceiling of marks : 30)

**Section C (Essay)**

*Answer any **one** questions.*

*The question carries 10 marks.*

20. Explain Free radical polymerization with mechanism using suitable example.
21. Write notes on :
  - (a) Calendering.
  - (b) Compression moulding.
  - (c) Injection moulding.
  - (d) Poly urethanes.
  - (e) Polycarbonates.

(1 × 10 = 10 marks)