

C 40085

(Pages : 2)

Name.....

Reg. No.....

**SIXTH SEMESTER (CUCBCSS-UG) DEGREE EXAMINATION
MARCH 2023**

Chemistry

CHE 6B 13 (E2)—POLYMER CHEMISTRY

(2017–2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A (One word/Sentence)*Answer all questions.**Each question carries 1 mark.*

1. Give two examples for synthetic polymers.
2. _____ is an example for conducting polymer.
3. Hollow thermoplastic articles are generally produced by _____ moulding technique.
4. The non-stick layer of kitchenware contains _____ polymer.
5. Monomers are converted to polymers by _____ reaction.
6. _____ is an example of natural fibre.
7. Which polymer is used to make bullet proof glass ?
8. The primary substance used for vulcanising rubber is _____.
9. What is the glass transition temperature of polystyrene ?
10. What is Ziegler-Natta catalyst ?

(10 × 1 = 10 marks)

Section B (Short Answer)*Answer any ten questions.**Each question carries 2 marks.*

11. How are polymers classified according to their origin ?
12. What is meant by group transfer polymerisation ?
13. Mention two applications of silicone rubber in medical field.
14. Briefly explain important applications of carbon fibre.
15. Give two examples for heat-resistant polymer.
16. What is lexan ?

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17. Give two applications of urea-formaldehyde resin.
18. What are the characteristic properties of Teflon ?
19. Write short note on 'Nomex'.
20. What is rotational moulding ?
21. Mention important manufacturing process for fibre.
22. What is suspension polymerisation ?

(10 × 2 = 20 marks)

Section C (Paragraph)

Answer any **five** questions.

Each question carries 6 marks.

23. With suitable examples, explain the difference between thermoplastics and thermosetting plastics.
24. What is Kevlar ? Explain its applications.
25. Briefly explain blow moulding technique.
26. Explain free radical chain polymerisation.
27. Write short note on nitrile rubber.
28. Briefly explain the pollution due to plastics.
29. Discuss the homo and hetero polymers with example.
30. Mention the differences between LDPE and HDPE.

(5 × 6 = 30 marks)

Section D (Essays)

Answer any **two** questions.

Each question carries 10 marks.

31. (a) Explain interfacial polycondensation polymerisation reaction with suitable example.
(b) Discuss calendaring and thermoforming techniques for the manufacture of polymer products.
32. Briefly discuss the preparation, structure, properties and uses of (a) SBR and (b) Terylene.
33. Discuss the number average, weight average and viscosity average molecular weight of polymers in detail.
34. Write short note on :
 - (a) Glass transition temperature.
 - (b) Ring opening polymerisation and
 - (c) Poly Dispersity Index.

(2 × 10 = 20 marks)