QP CODE: 24000646

24000646

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, MARCH 2024

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

3BBD7B3D

Time: 3 Hours Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What are thermoplastics? Give two examples.
2. What is meant by step growth polymerisation? Give an example.
3. What is GTP? Name two monomers that can be polymerised using GTP.
4. How solubility varies from crystalline to amorphous polymers?
5. Explain Gibbs Thompson formula.
6. Why double bonds affects Tm of polymers ?
7. How crosslinks can be formed?
8. What is meant by Die casting?
9. What is HDPE? Give its uses.
10. Give an example for a fluoropolymer and write its method of preparation.
11. Give the limitations of polycarbonate.
12. Which is the first synthetic conducting polymer? Give its structure.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write any five differences between addition polymerisation and condensation polymerisation.

14. How do you determine weight average molecular weight?

15. Explain the importance of glass transition temperature.

16. Discuss on addition reactions of polymers.

17. What is oxidative degradation?

18. Give any two vinyl polymers, its method of preparation and uses.

19. Write briefly on the preparation, properties and uses of formaldehyde resins.

20. Briefly describe Flame retardant polymers.

21. Briefly explain the controlled drug delivery system.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain the mechanisms of any three types of Chain polymerisations.

23. Discuss briefly the following techniques of polymerization using suitable examples.
    (a) Emulsion polymerization
    (b) Interfacial polycondensation
    (c) Melt polycondensation

24. Explain briefly the following polymer processing techniques:
    (a) Injection moulding
    (b) Compression moulding
    (c) Extrusion moulding

25. Explain
    a) Conduction Mechanism in polymers
    b) Band Gap Theory
    c) Applications of Conducting polymers

(2×15=30)