



20100440

QP CODE: 20100440

Reg No :

Name :

BSc DEGREE (CBCS) EXAMINATION, MARCH 2020

Sixth Semester

Choice Based Core Course - CH6CBT01 - POLYMER CHEMISTRY

B.Sc Chemistry Model I, B.Sc Chemistry Model III Petrochemicals, B.Sc Chemistry Model II

Industrial Chemistry,

2017 Admission Onwards

630DDABA

Time: 3 Hours

Marks: 80

Part A

*Answer any **ten** questions.*

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

1. Differentiate between linear polymers and branched polymers.
2. What are condensation polymers? Give two examples.
3. What are the characteristic features of coordination polymerisation?
4. How NMR is used to determine crystalline melting point?
5. Why the melting of polymers takes place over a range of temperatures?
6. What is the relation between molecular weight and T_g ?
7. How are polyanhydrides degraded?
8. Give two advantages and disadvantages of Rotational casting.
9. What is PVC? Write the monomer of PVC.
10. What is PMMA? Give any two uses.
11. What is Dacron? How is it prepared?
12. What is Bone cement? What chemical is added to it to prevent premature polymerization?

(10×2=20)

Part B





*Answer any **six** questions.
Each question carries **5** marks.*

13. Explain group transfer polymerisation using an example.
14. What is the effect of polymer composition and structure of polymers?
15. Discuss on the determination of Viscosity average molecular weight.
16. Discuss on crosslinking reactions.
17. Explain the term mechanical degradation.
18. Differentiate Nylon-6 from Nylon 6,6.
19. Give the method of preparation of epoxy resins and their uses.
20. Briefly describe Flame retardant polymers.
21. What are conducting polymers? Explain with suitable examples.

(6×5=30)

Part C

*Answer any **two** questions.
Each question carries **15** marks.*

22. Explain the mechanism of the following:
 - (a) Free radical polymerisation
 - (b) Anionic polymerisation
 - (c) Cationic polymerisation
23. Explain the following techniques of polymerisation:
 - (a) Solution polymerisation
 - (b) Melt polycondensation
 - (c) Interfacial polycondensation
24. Explain briefly the following polymer processing techniques:
 - (a) Injection moulding
 - (b) Compression moulding
 - (c) Extrusion moulding
25. Explain in detail various methods of synthesis of carbon nano tubes and its applications.

(2×15=30)

