

D6BCH2005

Reg.No.....

Name:

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2023
(Regular/Improvement/Supplementary)

CHEMISTRY
GCHE6E02T: POLYMER CHEMISTRY

Time: 2 Hours

Maximum Marks: 60

SECTION A: Answer the following questions. Each carries *two* marks.
(Ceiling 20 Marks)

1. How are polymers classified based on polymerization? Give one example each.
2. What is crosslinking?
3. What are the different stages of free radical polymerization?
4. What is viscosity average molecular weight?
5. Give the equation for the number average and weight average molecular weight of a polymer.
6. What is meant by the viscoelasticity of a polymer?
7. Mention the advantages and disadvantages of bulk polymerization reaction.
8. Write an account on thermoforming.
9. What is meant by calendaring?
10. Comment on nylon 6. Give any two applications.
11. What is EVA? Write two uses.
12. Give an example of a polycarbonate polymer, its monomer and its use.

SECTION B: Answer the following questions. Each carries *five* marks.
(Ceiling 30 Marks)

13. Explain Cossee's monometallic mechanism.
14. Explain the process of oxidative degradation of polymers.
15. What is degree of polymerization? What is meant by the molecular weight of a polymer and how is it related to its degree of polymerization?
16. Discuss compression moulding and rotational moulding.
17. Write an account natural rubber and its properties? How the process of vulcanization modify the properties of natural rubber?
18. Write a note on plastic processing and recycling methodologies.
19. Explain plastic identification codes and its significance.

SECTION C: Answer any 1 question. Each carries *ten* marks.

20. Discuss Zeigler-Natta polymerization explaining the mechanism and its advantages.
21. Write a note on: (i) Melt condensation.
(ii) Solution polymerization.
(iii) Interfacial polycondensation.

(1 x 10 = 10 Marks)