

(Pages : 3)



T – 1655

Reg. No. : .....

Name : .....

**Sixth Semester B.Sc. Degree Examination, April 2024**

**First Degree Programme under CBCSS**

**Chemistry**

**Elective Course**

**CH 1661.3 : POLYMER CHEMISTRY**

**(2020 Admission Onwards)**

Time : 3 Hours

Max. Marks : 80

**SECTION – A**

Answer **all** questions. Each question carries **1** mark. Answer in one word to maximum of **two** sentences.

1. What are polymer inhibitors? Give one example.
2. What is silk made of?
3. Explain the term thermoforming.
4. What is the monomer of neoprene?
5. What are polyacetals? Polyacetal has the simplest structure of all the polyethers.
6. Explain the term crystallinity in polymer.
7. Give one example for conducting polymer.

**P.T.O.**

8. What is an example of emulsion polymerization?
9. What are the general characteristics of polymers?
10. What is GTT in polymer chemistry?

(10 × 1 = 10 Marks)

### SECTION – B

Short answer type (Not to exceed one paragraph) Answer any eight questions. Each question carries 2 marks.

11. What are bifunctional monomers? Explain with an example.
12. What are elastomers?
13. What are polycarbonates? Mention its uses.
14. Give one method for the preparation of melamine-formaldehyde resin.
15. How will you prepare polybutadiene? Give its two uses.
16. Explain the preparation and properties of teflon.
17. What is CMC polymer?
18. Explain the properties and applications of polyterephthalates.
19. What are the factors affecting GTT of a polymer?
20. What is PDI? Mention its significance.
21. What are fibres? Give one example.
22. What are plasticizers? Explain with an example.

(8 × 2 = 16 Marks)

### SECTION – C

Short essay (Not to exceed **120** words) Answer any **six** questions. Each question carries **4** marks.

23. What are cross linked polymers? Discuss their properties.
24. Differentiate step growth and chain growth polymerization reactions.
25. What is copolymerization reaction? Give the preparation of ABS.
26. Write a short note on polyethers.
27. Differentiate LDPE and HDPE.
28. Discuss the properties and applications of amino resins.
29. What are the various methods of degradation of polymers?
30. Explain the terms extrusion and injection moulding in polymer processing.
31. Discuss the kinetics of polymerization process.

**(6 × 4 = 24 Marks)**

### SECTION – D

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

32. Describe the mechanisms of ionic polymerization and free radical polymerization.
33. Write short note on the following
  - (a) Cellulosics. 7
  - (b) Epoxy resins and its curing mechanism. 8
34. Discuss the methods of determination of molecular weight of a polymer.
35. (a) Discuss the electrical, thermal and optical properties of polymers. 10  
(b) What are the environmental hazardous of plastics? 5

**(2 × 15 = 30 Marks)**