



QP CODE: 25047544



25047544

Reg No :

Name :

M.Sc DEGREE (CSS) EXAMINATION, NOVEMBER 2025

Third Semester

M Sc POLYMER CHEMISTRY

Core Course - CH050302 - CONCEPTS OF POLYMER CHEMISTRY

2019 ADMISSION ONWARDS

04A29D2D

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Define the terms: a) Degree of polymerisation and b) Copolymers.
2. Define a) thermosetting resins b) Elastomers c) Polymer blends.
3. Explain with example the method of redox initiation for graft polymerization.
4. Reactions of poly(vinyl acetate) is important in polymer industry. Explain with examples.
5. Mention the importance of 'genetic engineering' in polymer chemistry'.
6. Write kinetic equations to show the relation between the rate of reaction and concentration of initiator, radicals and monomers for radical chain polymerization.
7. Write a short note on living polymerization.
8. Distinguish between isotactic, syndiotactic and atactic polymers.
9. Write a note on stereo regular polymerization.
10. Draw the trans and gauche conformations of polyethylene.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Discuss the nomenclature of polymers based on structure (both IUPAC and Non-IUPAC).
12. Explain how the charge on polymer molecule affects its reactivity.
13. Mention four applications of polymer substrates in biochemical and organic syntheses.
14. Discuss briefly the importance of click chemistry for polymerization.





15. Discuss briefly ring opening polymerization of poly propylene oxide.
16. Describe solution polymerization with examples.
17. Explain the term tacticity with suitable illustrations.
18. Write a brief note on chiral conformation of polymers.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Explain the following:
a) Crosslinking reactions of alkyds and elastomers based on 1,3-dienes b) Halogenation of natural rubber and saturated hydrocarbon polymers.
20. Discuss the mechanism and kinetics of stepreaction (condensation) polymerisation.
21. What is radical chain polymerisation? Explain its kinetics and mechanism.
22. Briefly explain the following
i) Conformational transitions in polymers ii) Optically active poly (α olefins).

(2×5=10 weightage)

