COURSE CODE - 2030204

PG DEGREE EXAMINATION- JAN 2009

M.SC(CHEMISTRY)

POLYMER CHEMISTRY

(For the Candidates Admitted from Calendar 2007 onwards)

Time: 3 hours **Max. Marks: 75**

Section-A

Answer all the Questions: **15 X 1 =15**

1. Polymer is a _____ units of monomer.
2. Define step polymerization.
3. Suggest any two initiators that are widely used in a radical polymerization reaction.
4. Explain the term auto acceleration
5. How do you differentiate redical polymerization from ionic polymerization?
6. What is meant by backbiting?
7. Define copolymers.
8. Which is thermodynamically favoured, cyclisation or linear plymerisation?
9. What is meant by backbiting?
10. Give the copolymer equation.
11. Define coordination polymersation.
12. How polymers are classified on the basis of stereoregularity?
13. Define Tg.
14. Give the name of a water soluble polymer.
15. What is meant by calendaring?

Section – B

Answer any Five Questions: **5 X 6 =30**

16. a. Explain free redical polymerization with example.

(Or)

b. What do you know about anionic addition polymerization?

17. a. Describe osmotic pressure method of determination of molar masses of polymers.

(Or)

b. Write briefly about coordination polymerization.

18. a. Describe viscosity method of determination of molar masses of macro molecules.

(Or)

b. Explain copolymerization with example.

19. a. Explain the kinetics of acid catalysed stepwise polymerization with an example.

(Or)

b. Derive the rate expression for free radical chain polymerizations.

20. a. Distinguish between radical and ionic polymerizations.

(Or)

b. Give an account on:

i. Effect of monomers, initiators and solvents in anionic polymerization

ii. Presence of cocatalyst in cationic polymerization.

Section – C

Answer any Two Questions: **2 X 15 = 30**

21. Discuss the chemistry of biopolymers.
22. a. Explain cationic addition polymerization with example.

    b. Write briefly about glass transition temperature.
23. Write a note on gel – permeation chromatography.
24. Distinguish with examples condensation and addition polymerization.
25. Explain the polymerization in detail