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D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

SEMESTER EXAMINATIONS

NOVEMBER - 2016

15CPCH3D

ELECTIVE: POLYMER CHEMISTRY

Time: 3 Hrs

Max.Marks : 75

SECTION-A (5x 6 =30)

Answer ALL the questions.

1. (a) (i) What is meant by co-polymers? Give any two examples. (3)
 (ii) Define inhibition and retardation. (3)
 (Or)
- (b) Enumerate the mechanistic steps involved in ionic polymerization and derive the rate equation. (6)
2. (a) Bring out the difference between number average molecular weight and weight average molecular weight of polymers. (6)
 (Or)
- (b) Define glass transition temperature and write the factors affecting glass transition temperature. (6)
3. (a) Explain how vulcanizing process is widely used to effect cross linking. (6)
 (Or)
- (b) Explain in detail about synthesis of graft and block copolymers. (6)
4. (a) What is meant by calendaring process? Explain in detail. (6)
 (Or)
- (b) Explain BOD and COD methods in detail. Give its uses. (6)
5. (a) Write the structure of polystyrene, polyester and polyacrylo nitrile. Give its properties and uses. (6)
 (Or)
- (b) Explain the role of Ion exchange resin in polymerisation process.

SECTION-B (3x15 =45)

Answer any THREE of the following questions.

6. (a) Discuss in detail about the kinetics of addition polymerization. (7)
 (b) Give a brief account on suspension and bulk polymerisation. (8)
7. Give an account of (i) Gel permeation chromatography. (ii) Ultracentrifuge method (15)
8. Explain the various types of degradation in polymer reactions. (15)
9. Discuss the applications of polymers in industrial effluent treatment. (15)
10. Explain in detail about polyacetylene, polyaniline and polyvinyl chloride. Give its properties and uses. (15)