

Total No. of Questions : 12]

SEAT No. :

P1109

[4659]-297

[Total No. of Pages : 2

**B.E. (Chemical Engineering)
c - POLYMER TECHNOLOGY**

(2008 Course) (Semester - I) (Elective - II) (409342)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Draw neat diagrams wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data, if necessary.*
- 5) *Use of logarithmic table, electronic pocket calculators is allowed.*

SECTION - I

Q1) a) Explain in detail six different factors which need to be considered for determining polymer properties. **[12]**

b) Explain "Thermoplastics" with three examples. **[6]**

OR

Q2) a) Distinguished between Linear and Branch polymers. **[6]**

b) Write a note on Classification of polymers. **[12]**

Q3) a) Differentiate with one example each between Addition and Condensation Polymerization. **[10]**

b) Write a note on Interfacial Polymerization. **[6]**

OR

Q4) a) Explain in detail with two examples Bulk Polymerization Technique. **[10]**

b) Write a note on Suspension Polymerization. **[6]**

Q5) Explain effect of Molecular weight and Molecular weight Distribution on the properties of polymers. Explain Polydispersity Index and its importance. **[16]**

OR

P.T.O.

- Q6)** a) Explain Gel Permeation Chromatography. [10]
b) Find the polydispersity Index of the mixture composed of 20 molecules of 1000 monomer lengths and 380 molecules of 1 monomer lengths. [6]

SECTION - II

- Q7)** a) Discuss in detail all technical conclusions from Free Radical Kinetics Studies. [8]
b) Discuss the necessary equation of the total rate of the disappearance of the monomer M via Initiation, Propagation, and the termination reaction by monomer transfer. [10]

OR

- Q8)** a) Explain kinetics of copolymerization. [10]
b) Write a note on Coordination Polymerizations. [8]

- Q9)** a) Explain with neat sketch, working of Rotational molding. [10]
b) Discuss any three additives used in polymer compounding. [6]

OR

Q10) Explain with neat sketch, working of Injection and Extrusion molding. [16]

Q11) Explain manufacturing of PS and Butyl Rubber with flow diagram. [16]

OR

Q12) Explain manufacturing, Properties and applications of Epoxy and Unsaturated Polyester. [16]

