

B.Tech. (Chemical Engineering) Eighth Semester (C.B.S.)

Elective-III : Polymer Engineering

P. Pages : 1

Time : Three Hours



NRT/KS/19/3809

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
 2. Solve **any five** questions.
 3. Assume suitable data whenever necessary.

1. a) Give the classification of polymers. **8**
b) Discuss the factors affecting the polymer properties. **8**
2. a) Elaborate various methods of determination of molecular weights. **8**
b) Discuss emulsion polymerization with suitable example. Also state the advantages and disadvantages of emulsion polymerization. **8**
3. a) Discuss Smith Ewart Kinetics for emulsion polymerization. **10**
b) Write a note on condensation polymers. **6**
4. a) What are the types of polymerization reactors? Discuss the mode of operation. **8**
b) Discuss the design aspects of polymerization reactor. **8**
5. a) Discuss post polymerization unit operations. **8**
b) Write a note on moulding methods of polymers. **8**
6. a) Elaborate various mechanical properties of polymers. **8**
b) Discuss ASTM methods of testing of polymers. **8**
7. a) Develop the kinetics of step growth polymerization. **8**
b) What are High performance polymers? Discuss. **8**
8. Write a note on the following. **16**
 - a) Thermoset polymers.
 - b) Nylons.
 - c) Plastic waste management.
 - d) Unsaturated polyesters.
