

(3 Hours)**Total Marks: 80****N.B.**

1. Question No. 1 is Compulsory.
2. Attempt any **Three** Questions from remaining **Five** Questions
3. Assume Suitable Data if needed and Justify the Same
4. Figures to the right indicate full marks.

Que.1

- a) Write explanatory note on solubility behavior of polymer [05]
- b) Explain linear, branch and cross linked polymers [05]
- c) Explain bulk polymerization [05]
- d) Explain film blowing with neat sketch [05]

Que.2

- a) Explain Classification of Polymers and give one example of each type. [10]
- b) Enlist different types of polymerization techniques and explain emulsion polymerization technique. [10]

Que.3

- a) What is copolymerization and derive the rate equation for addition copolymerization [10]
- b) Explain types of Polymer Degradation [10]

Que.4

- a) Describe Blow Moulding for manufacture of hollow bottle [10]
- b) Enlist the types of Polyethylene and describe the manufacturing of Polyethylene with Process Flow Sheet. [10]

Que.5

- a) Derive an expression to find out the weight average molecular weight of the polymer [10]
- b) Describe the manufacturing of polystyrene with Process Flow Sheet. [10]

Que.6

- Write short note on [20]
- a) Ideal and azeotropic copolymerization
 - b) Natural polymer cellulose
 - c) Glass transition temperature
 - d) Plasticizers and Fire Retardants
