

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x8=16)

- Q.23 Write a short note on the following terms;
- a) Number average molecular weight. (CO1)
 - b) Bulk polymerization (CO2)
- Q.24 Explain structure, properties and uses of polyester in detail. (CO3)
- Q.25 Discuss Blow molding polymer processing technique with neat and labeled sketch. (CO4)

No. of Printed Pages : 4

Roll No.

220563C

6th Sem.

**Branch : Chemical Engineering
Sub. : Polymer Technology**

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (6x1=6)

- Q.1 What is the term for the smallest unit of a polymer? (CO1)
- a) Monomer
 - b) Polymer
 - c) Macromolecule
 - d) Oligomers
- Q.2 The example of synthetic polymer is _____. (CO1)
- a) Starch
 - b) Rubber
 - c) Cellulose
 - d) Polyvinyl chloride (PVC)
- Q.3 Nylon is a / an _____. (CO1)
- a) Thermoplastic
 - b) Thermosetting
 - c) Elastomers
 - d) Fiber
- Q.4 Which of the following monomeric unit is used for the production of polyethylene? (CO1)
- a) Ethylene
 - b) Ethyne
 - c) Ethane
 - d) Vinyl chloride

Q.5 Which processing technique is used to produce hollow plastic bottles and containers? (CO4)

- a) Injection molding
- b) Blow molding
- c) Extrusion molding
- d) None of these

Q.6 What is the formula for calculation of weight average molecular weight? (CO1)

- a) $\frac{nimi^2}{nimi}$
- b) $\frac{\bar{n}imi^2}{nimi}$
- c) $\frac{nimi^2}{\bar{n}imi}$
- d) $\frac{\bar{n}imi^2}{\bar{n}imi}$

Where ni, mi are number of molecule and molecular weight of ith polymer respectively.

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 The viscosity of polymer _____ as its average molecule weight increases. (CO1)

Q.8 Emulsion and suspension polymerization are Heterogenous polymerization. (True / False) (CO2)

Q.9 The order of chain growth polymerization reaction is Initiation ® Termination® Propagation. (CO2)

Q.10 Write the monomer used for polystyrene. (CO3)

Q.11 The number of repeating unit used in polymer formation is called degree of polymerization. (True / False) (CO1)

Q.12 Give any one example of elastomers. (CO1)

SECTION-C

Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x4=32)

Q.13 Explain the difference between Thermoplastic and thermosetting polymer. (CO1)

Q.14 What is the effect of average molecular weight on the following properties of polymer. (CO1)

- a) Melting point and tensile strength
- b) Viscosity

Q.15 Explain Addition polymerization with example. (CO2)

Q.16 Write down the structure two properties and two uses of nylon-6. (CO3)

Q.17 Describe the Calendering processing technique for polymers. (CO4)

Q.18 Explain the brief chain growth polymerization with the help of one example. (CO2)

Q.19 Discuss the emulsion polymerization technique in brief. (CO2)

Q.20 Describe the role of plasticizers in plastics. (CO4)

Q.21 Explain the structure, two properties and two uses of polyvinylchloride. (CO3)

Q.22 Discuss the solution polymerization technique in brief. (CO2)