

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)

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Roll No.

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) $\frac{\sum n_i m_i^2}{\sum n_i m_i}$ b) $\frac{\sum n_i m_i^2}{\sum n_i m_i}$
c) $\frac{\sum n_i m_i^2}{\sum n_i m_i}$ d) $\frac{\sum n_i m_i^2}{\sum n_i m_i}$

Where n_i , m_i are number of molecule and molecular weight of i th 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 Hetrogenous polymerization. (True / False) (CO2)
- Q.9 The order of chain growth polymerization reaction in 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 Calendaring 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)