

'I' Scheme

Sample Question Paper

Program Name : Diploma in Chemical Engineering

Program Code : CH

Semester : Fifth

Course Title : Polymer Technology

Marks : 70

22610

Time: 3 Hrs.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following.

(10 Marks)

- a. Define polymerization.
- b. Write the reaction involved in manufacturing of Polyethylene.
- c. List the raw materials requires for the production of phenolic resins.
- d. List any four types of Elastomers.
- e. Write the application of Molding in plastic processing.
- f. List any four types of molding processes.
- g. List any four applications of fiber.

Q.2) Attempt any THREE of the following.

(12 Marks)

- a. Describe Addition Polymerization mechanism with example.
- b. Draw process flow diagram for manufacturing of Polyethylene by high pressure process.
- c. Explain principle of vulcanization with its application.
- d. State the advantages and disadvantages of Reaction Injection Moulding process.

Q.3) Attempt any THREE of the following.

(12 Marks)

- a. Explain Wet Spinning in fiber processing.
- b. Draw a neat sketch of Extruder and label it.
- c. State the Impact of polymers on environment.
- d. Write the properties and raw material required for PVC. State its four industrial applications.

Q.4) Attempt any THREE of the following. (12 Marks)

- a. Describe manufacturing process for polyvinyl chloride.
- b. Explain the principle of reinforcement and its use in elastomer.
- c. Explain scouring of fiber and state its advantages.
- d. Draw neat sketch of dry spinning.
- e. Write advantages and disadvantages of compression molding.

Q.5) Attempt any TWO of the following. (12 Marks)

- a. Explain injection molding process.
- b. Explain bulk polymerization and solution polymerization with examples.
- c. Explain manufacturing of Nylon 66 with process flow diagram.

Q.6) Attempt any TWO of the following. (12 Marks)

- a. State the importance of given properties of fiber in textile 1) Tenacity 2) Elasticity 3) Denier
- b. Explain blow molding process.
- c. Describe any three properties of elastomers.

'I' Scheme

Sample Test Paper - I

Program Name : Diploma in Chemical Engineering
Program Code : CH
Semester : Fifth
Course Title : Polymer Technology
Marks : 20

22610

Time: 1 Hour.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(08 Marks)

- a. Define polymerization.
- b. Write the reaction involved in manufacturing of polyethylene.
- c. List the raw materials requires for the production of phenolic resins.
- d. List any four types of elastomers.
- e. List any four types of polymerization processes.
- f. List any four properties of elastomers.

Q.2 Attempt any THREE.

(12 Marks)

- a. Describe addition polymerization mechanism with example.
- b. Draw process flow diagram for manufacturing of Polyethylene by high pressure process.
- c. State the impact of polymers on environment.
- d. Write the properties and raw material required for PVC. State its four industrial applications.
- e. Explain Describe manufacturing process for polyvinyl chloride.
- f. Explain the principle of reinforcement and its use in elastomer.

'I' Scheme

Sample Test Paper - II

Program Name : Diploma in Chemical Engineering
Program Code : CH
Semester : Fifth
Course Title : Polymer Technology
Marks : 20

22610

Time: 1 Hour.

Instructions:

- (1) All questions are compulsory.
- (2) Illustrate your answers with neat sketches wherever necessary.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data if necessary.
- (5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR.

(08 Marks)

- a. List any four types of molding processes.
- b. List any four applications of fiber.
- c. Name any four after treatment methods for fiber.
- d. Define yarn and fiber.
- e. State the application of foaming in plastic processing.
- f. Write the application of molding in plastic processing

Q.2 Attempt any THREE.

(12 Marks)

- a. Draw neat sketch of dry spinning.
- b. Write advantages and disadvantages of compression molding.
- c. Explain wet spinning in fiber processing.
- d. Explain scouring of fiber and state its advantages.
- e. Draw a neat sketch of extruder and label it.
- f. State the advantages and disadvantages of reaction injection moulding process.