

M.Tech. Second Semester (Membrane & Separation Tech.) (F.T.)
13032 : Advanced Material Technology : 2 MST 3 Elective

P. Pages : 1

Time : Three Hours



AU - 3272

Max. Marks : 80

- Notes :
1. Answer **any six** question.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Diagrams and Chemicals equations should be given wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

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| 1. | Differentiate between addition polymerization and condensation polymerization along with their salient features and applications. | 13 |
| 2. | a) Differentiate between thermoplastics and thermosets with suitable examples. | 7 |
| | b) What is tacticity of polymers? Explain. | 6 |
| 3. | a) What are composites and how are they developed? | 7 |
| | b) How are flame retardant polyester fibres developed? | 7 |
| 4. | a) Discuss salient features of BOPP film and its applications. | 7 |
| | b) How are membrane produced with the use of polymers? Discuss their characteristics. | 6 |
| 5. | a) Differentiate between linear, crosslinked and branch polymers with suitable examples. | 7 |
| | b) Discuss the applications of plastics in packaging of various products with suitable examples. | 6 |
| 6. | a) Explain the stress characteristics of material in general. | 7 |
| | b) Explain the crystal structure in metals. What do you mean by void? | 6 |
| 7. | a) How are crystal defects classified? | 7 |
| | b) Differentiate between ferrous alloys and non ferrous alloys. | 6 |
| 8. | a) How metal structure is improved by heat treatment? Discuss Annealing process in details. | 7 |
| | b) How is lining provided to process equipments and discuss the salient features of lead lining. | 6 |
| 9. | a) What are the various theories of corrosion and discuss the meaning of corrosion fatigue. | 7 |
| | b) What are the various corrosion prevention techniques? Discuss in details. | 6 |
| 10. | Explain the following. | 14 |
| | i) Materials of construction for handling specific chemicals. | |
| | ii) Ceramic materials and their salient features. | |
| | iii) Reinforcement fibres for composites. | |
