

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

P. Pages : 1

Time : Three Hours



**AV – 3381**

Max. Marks : 80

- Notes :
1. Answer **any six** questions.
  2. Due credit will be given to neatness and adequate dimensions.
  3. Diagrams and chemical 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.

1. Differentiate between addition polymerization and condensation polymerization with suitable examples. 13
2. What are composites and how are they developed? How composites differ from polymer alloys? Discuss in details. 13
3. a) What are natural polymers? Explain with suitable examples. 7  
b) Discuss the salient features of BOPP film and its applications. 7
4. a) What do understand by tacticity of polymers? Explain in details. 7  
b) How are flame retardant polyolefins produced? 6
5. a) Discuss the various polymers used for membrane preparation with their salient features. 7  
b) Differentiate between linear, branched and cross linked polymers. 6
6. a) What are the materials used for construction of process equipments? 7  
b) Explain voids in metal structure and the characteristics of ionic solids. 6
7. a) How are defects in crystals classified? Explain in details the point defects. 7  
b) What are non ferrous alloys? Discuss their salient features. 6
8. a) Why is it necessary to carry out heat treatment of metals and what are the heat treatment processes? 7  
b) Discuss the materials of construction for handling of specific chemicals. 6
9. a) What are the various theories of corrosion and discuss the factors affecting electrochemical corrosion. 7  
b) Explain in details the corrosion fatigue and various corrosion prevention techniques. 6
10. Explain the following **any two**. 14
  - i) Inspection and testing of linings.
  - ii) Reinforcement fibres for composites.
  - iii) Hardening and Normalizing.

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