M. Tech. Second Semester (Membrane & Separation Tech.) (F.T.)

13032 : Advanced Material Technology : 2 MST 3

P. Pages : 1

Time : Three Hours

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AW - 3712

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.

1. Explain the various terms associated with crystallography and the various symmetries observed when viewed externally. **13**

2. How to classify imperfections in crystals on the basis of geometry and discuss the main types of dislocations. **13**

3. What are alloy Steels and explain the function of manganese, silicon, chromium in such steels and the advantages over carbon steels. **13**

4. Explain the purpose of heat treatment, difference between normalizing and hardening and the role of grain growth on yield strength. **13**

5. State the parameters to be considered in selection of raw material in processing of ceramic powder and the important mechanical and electrical properties of ceramics. **14**

6. Explain the glass transition temperature, structural features of polymers and the mechanism of polymer fracture. **13**

7. Explain the difference between polymer blends and alloys and suggest suitable packaging material and method of packaging for detergents and edible oils. **13**

8. Explain the salient features of thermoplastic structural composites and how are FRP and GRP processed? **13**

9. How is lining of equipments done and discuss the applications of polycarbonate and poly sulfone. **13**

10. Explain the following : **14**

a) Flame retardant polymeric fibers.

b) BOPP film in food packaging.

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