## 13032 : Elective Advanced Material Technology : 2 MST 3

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

1. How will you classify the polymers and distinguish between molecular and super molecular structures.
2. Explain degree of crystallinity of polymers and the mechanism of crystallization.
3. Explain the structural features, properties and applications of polyether sulphone and styrene - butadiene rubber.
4. How are membranes produced with the use of polymers and discuss their characteristics? Discuss in details die casting and film, casting techniques in details.
5. What are the various plastics processing techniques and discuss the salient features of thermoforming and foaming.
6. a) Discuss the crystal structure in metals and explain the meaning of void.
b) Why stresses are developed in metals and explain the stress characteristics.
7. How metal structure is improved by heat treatment? Discuss in details any two techniques commonly used?
8. a) What are the various forms of corrosion? Explain any one in details.
b) How to prevent corrosion? Discuss the salient features of cathodic protection system.
9. a) What are ceramics? Discuss the processing steps in processing of ceramic powder.
b) Explain the mechanical and electrical properties of ceramics.
10. Explain in details the following.
i) Properties and applications of cooper alloys.
ii) Materials of construction for handling of specific chemicals.
