



PART B — (5 × 16 = 80 marks)

11. (a) (i) Summarize the classification of polymers with examples. (8)  
(ii) Discuss the chain termination steps in radical and cationic polymerizations. (8)

Or

- (b) (i) Give the principle of bulk and solution polymerizations. Mention their merits and demerits. (8)  
(ii) Illustrate the number average and weight average molecular weights. (8)
12. (a) (i) What are nylons? Give the preparation of nylon 6,6. How does hydrogen bonding affect the properties of nylon fibres? (8)  
(ii) Discuss the preparation, properties and applications of polyacrylonitrile and polycarbonates. (8)

Or

- (b) (i) Describe the preparation, properties and applications of carbon fibres. (8)  
(ii) Write a note on preparation and applications of conducting polymers. (8)
13. (a) (i) What types of intermolecular bonds are present in polymers? Illustrate with examples. (8)  
(ii) Explain with chemical equations the main steps involved in the manufacture of viscose rayon. (8)

Or

- (b) (i) Discuss the properties which control the mechanical response of a polymer fibre. (8)  
(ii) Describe the solubility of crystalline and amorphous polymers. (8)
14. (a) (i) Discuss the structural aspects which leads to thermal stability in polymers. (8)  
(ii) Explain the spin draw process. (8)

Or

- (b) (i) Discuss the various texturisation techniques. (8)  
(ii) Write a note on heat setting. (8)

- 
15. (a) (i) Discuss the varieties of silk and wool. (8)  
(ii) Give details about jute cultivation and fibre extraction. (8)

Or

- (b) (i) Compare the properties of silk, wool and jute fibres. (8)  
(ii) Write a note on wool shearing and grading. (8)
-