B. TECH.

(SEM. IV) EXAMINATION. 2006-07

FIBRE SCIENCE - II

Time : 3 Hours] [Total Marks : 100

Note : (1) Attempt all questions.
(2) All question carry equal marks.

1 Attempt ‘any four’ parts of the following : 5x4=20

(a) What are the various quality parameters in wool fibre production system?

(b) Discuss the Role of ‘Molecular Weight’ and its distribution with respect to ‘Fibre forming Polymer’.

(c) Distinguish between ‘Addition Polymerization’ and ‘Condensational polymerization’.

(d) Describe salient features of ‘solution polymerization technique.’

(e) Explain the Traditional system of ‘Auction’ for wool marketing.

(f) How thermoset polymers are different from thermoplastic polymers.
2 Attempt ‘any two’ parts of the following: 10×2=20
   (a) Explain the process of ‘Xanthation’ and ‘Ripening’ with the help of chemical reactions.
   (b) Describe the working of ‘Screw Type Melt Extruder’ with the help of a neat labelled diagram.
   (c) Write short notes on the following:
       (i) Chemistry of lyocell fibre
       (ii) Chemistry of formation of secondary Acetate.

3 Attempt ‘any two’ of the following: 10×2=20
   (a) Discuss the similarities and dissimilarities between wet spinning and dry spinning processes.
   (b) Discuss various end uses of cellulose acetate and tri-acetate rayons.
   (c) Discuss different physical and chemical properties of viscose rayon fibre.

4 Attempt ‘any two’ of the following: 10×2=20
   (a) Why is a ‘Two Step Reaction’ preferred in PET polymerization. Give a graphical representation of DEG formation in the two steps.
   (b) Mention different side reactions in PET polymerization process. How do we control over thermal degradation of polymer in second step of PET manufacture.
   (c) With the help of a neat labelled diagram discuss the V-K Tube Method for Polymerization of Nylon6. Why is Nylon 6, 6 polymer chains are more flexible than PET polymer chains?
 Attempt ‘any two’ of the following:

(a) What do you understand by ‘Elastomeric fibres’? What makes it different from other man-made fibres?

(b) What are the objectives of ‘Texturizing’? What type of raw material is most suitable for texturizing process?

(c) Write short notes on the following:
   (i) Phenomena of Necking
   (ii) Solvents of PAN.