[Total No. of Questions - 9] [Total No. of Printed Pages - 2]

Dec.-22-0171

TE-401 (Man-Made Fibre)

B.Tech. 4th (CBCS)

Time : 3 Hours **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question from each section A, B, C, and D. Section E is compulsory.

SECTION - A

1. Explain PET manufacturing through TPA and DMT routes. (10)

2. Explain reactions involved in raw material synthesis for nylon 6 fiber. Explain its production method of nylon 6. (10)

SECTION - B

3. Explain the melt spinning of polypropylene fiber in detail. (10)

4. Explain the physical fundamentals of fiber for the spinning process. (10)

SECTION - C

5. Compare dry and wet spinning processes? (10)

6. Name various drawing systems. Explain the effect of drawing on the structure and properties of fibers. (10)

SECTION - D

7. Explain the structure properties and applications of glass fibers. (10)

8. Explain the structure properties and applications of carbon fibers. (10)

SECTION - E (Compulsory)

9. Attempt all questions.

   (a) What are the merits of man-made fibers over natural fibers?

   (b) Define various types of rayon.

   (c) What is spin finish? Why it is needed?

   (d) Define the spinning system which is required for viscose fibers.

   (e) What is heat setting? Why it is necessary?

   (f) Name the parameters which affect the heat setting.

   (g) What is dope?

   (h) What are aramid fibers? Name two applications of aramid fibers.

   (i) Write about flame retardant polyester.

   (j) State properties required for fiber forming materials.

   (10×2=20)