[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2066)

16062(J) June-16

B. Tech 4th Semester Examination

Man Made Fibres (NS)

TE-222

Time : 3 Hours **Max. Marks : 100**

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 & D of paper and all the subparts of Section E.

SECTION - A

1. (a) Give a flowchart of detailed classification of natural and man made fibres. (10)

   (b) Discuss the synthesis of caprolactum from phenol and aniline. (10)

2. (a) Give a comparative assessment of natural and man made fibres. (10)

   (b) Discuss the synthesis of DMT from p-xylene and acrylonitrile from propylene. (10)

SECTION - B

3. (a) Explain briefly the complete production sequence of polyester fibre. Also, discuss the production of PET through TPA and DMT route. (12)

   (b) Discuss the construction and importance of quenching chamber. (8)

4. (a) Mention the difference between Nylon 66 and Nylon 6. Discuss the production route for the polymers of these fibres. (10)

   (b) Discuss the construction of extruder and spinneret along with their importance. (10)

[P.T.O.]

SECTION - C

5. (a) Explain the principle of wet and dry spinning. Give a comparative assessment between these two. (10)

   (b) Discuss, in detail, the influence of drawing on the structure and properties of fibres. (10)

6. (a) Explain the principle of Dry-jet-wet spinning with a suitable diagram. Where it is used and why? (10)

   (b) Discuss different types of heat setting treatment given during fibre production along with their advantages and disadvantages. (10)

SECTION - D

7. (a) Write a note on Flame retardant fibres and bicomponent fibres production. (10)

   (b) Discuss different method of measuring molecular weight and fibre denier. (10)

8. (a) Discuss the production route of Tencel and micro fibres. How tencel is different from viscose fibre? (10)

   (b) Define different parameters used to measure the quality of a staple fibre. How fibre tenacity and shrinkage is measured? (10)

SECTION - E

9. (i) What is a regenerated fibre?
   (ii) Define tenacity and modulus of a fibre.
   (iii) What is an antistatic fibre?
   (iv) What is neck drawing?
   (v) What is gel spinning?
   (vi) Why spin finish is applied during fibre production?
   (vii) Mention the name of polymer for production of acrylic and polypropylene fibres.
   (viii) Why heat setting is done during fibre production?
   (ix) What is cationic dyeable polyester fibre.?
   (x) What are the raw materials of viscose fibres?

(2×10=20)