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

Dec.-22-0229

TE-504 (Non-Conventional Yarn Manufacture)

B.Tech. 5th (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. Give a detailed assessment of the fibre quality requirements for ring, rotor, air jet and friction spinning. Also explain the quality requirements in order of their importance. (10)

2. Give an assessment of the problems associated with spinning of manmade fibres in rotor spinning. Suggest some remedial measures too. (10)

SECTION - B

3. Discuss the role of opening roller, influence of rotor diameter and transport channel in governing the yarn characteristics. (10)

4. With the help of suitable sketch, describe the working of a vortex spinning system. Mention the application of such yarn. (10)

SECTION - C

5. Explain principle and mechanism of friction spinning along with parameters affecting yarn quality. (10)

6. Indicating the structural differences, give an assessment of the structure property relationship of rotor, air jet and ring spun yarns. (10)

SECTION - D

7. Describe wrap spinning system with a neat sketch. (10)

8. Explain any Twistless spinning system working on principle of permanent adhesion with neat sketch. (10)

SECTION - E

9. Attempt all questions:

   (a) Give an advantage and one disadvantage of electrostatic spinning system.

   (b) State the problems associated with ring spinning which led to the search of alternative spinning system.

   (c) What is back doubling in rotor spinning?

   (d) State the normal speed of opening roller and spinning drum in friction spinning system.

   (e) State the application field of core spun yarns.

   (f) What according to you is the basic problem of finer count spinning in rotor spinning system?

   (g) Mention the count range which is practically suitable to make on rotor spinning system.

   (h) Why Siro yarn results more uniform and stronger yarn as compared to ring yarn?

   (i) State one limitation for each of ring and rotor spinning system.

   (j) State the basic principle of self twist yarn production.

(10×2=20)