

Reg. No. :

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J 3440

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Fourth Semester

Textile Technology

TT 1254 — SPUN YARN TECHNOLOGY — II

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How does the ratio between cop and ring diameter affect the yarn tension?
2. What do you mean by roller off-set in ring frame drafting and give its importance?
3. What are the necessities to compact drafted fibre and strand at ring frame?
4. The rotor with 38 mm diameter inserts 600 twist/m and the yarn is taken at 80 m/min. Find out the Yarn arm speed in rpm.
5. How does Dref III spinning system produce finer yarn than Dref II?
6. The spinning tension does not limit the productivity in friction spinning. How?
7. How does the fibre strand width affect the air-jet yarn strength?
8. Why is wire point drafting system not preferred in air-jet spinning system?
9. Compare the structure of Murata vortex yarn with Murata air-jet yarn.
10. What are the drawbacks of double rove spinning system?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the changes to be made to change the direction of twist in ring frame? Discuss. (6)
- (ii) How does the spinning triangle dimension affect the productivity and quality of the yarn? Explain. (10)

Or

- (b) (i) Describe the method of fibre condensation in Sussen Elite spinning system. (8)
- (ii) Give the advantages of condensed yarn compare to conventional ring spun yarn. (8)
12. (a) Explain in detail the twisting principle of rotor spinning system and how does it eliminate the limitations conveyed by ring spinning system.

Or

- (b) (i) Discuss the influence of rotor diameter on productivity and quality of the yarn. (8)
- (ii) Explain the different types of rotor grooves and their influence on yarn quality. (8)
13. (a) Bring out the differences between Dref II and Dref III spinning system. And explain the method of producing fancy yarn in Dref II system.

Or

- (b) Draw the structure of ring, rotor, dref and air-jet spun yarn structure and compare their properties with respect fibre alignment in the yarn structure.
14. (a) Describe the method of yarn production by double air-jet nozzle.

Or

- (b) Discuss the method of raw material preparation and their influence on air-jet spun yarn strength.
15. (a) What is self-twist? Explain in detail the method of imparting strength on self-twisted spun yarn.

Or

- (b) Explain in detail the production of cover yarn by wrap spinning system and briefly explain the tensile behavior of core and cover yarn.