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Q 2523

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Sixth Semester

Textile Technology

TT 344 — NEW SPINNING TECHNOLOGIES

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the advantages of compact yarn compared to normal ring spun yarn?
2. Name the functional operations in rotor spinning.
3. What do you mean by belts in rotor spun yarns.
4. Explain on the effect of types of rotor groove on rotor spun yarn.
5. State the drawbacks of friction spinning system.
6. What are the process variables of friction spinning?
7. What is the twisting principle of self twist spinning?
8. State the importance of secondary airjet nozzle in airjet spinning.
9. Name any two types of twistless yarn manufacturing system.
10. Name the process variables of Siro spinning.

PART B — (5 × 16 = 80 marks)

11. (a) (i) With a neat sketch, explain the working principle of a rotor spinning machine. (10)
- (ii) What are the functions of navel and transport tube in rotor spinning machine. (2 × 3)

Or

- (b) (i) Explain in detail the necessary precautions to be observed to prepare slivers for rotor spinning system. (8)
- (ii) Discuss about different sliver preparation methods for rotor spinning system. (8)
12. (a) Give a detailed account on any two principles adopted for the production of condensed spun yarns with neat sketches.

Or

- (b) Explain in detail the various developments taken place in high speed rotor spinning machines to improve the machine efficiency and yarn quality.
13. (a) (i) Discuss the salient features of the Dref 3 spinning machine. (10)
- (ii) Discuss on any three factors which affect the yarn characteristics. (6)

Or

- (b) Give a detailed account on the various Dref spinning systems such as Dref I, Dref II and Dref III and compare them.
14. (a) Discuss in detail the working principles of the Air Jet spinning machine with relevant sketches.

Or

- (b) (i) What are the process parameters involved in airjet spinning system. (6)
- (ii) Give a detailed account on the influence of any four process parameters on the characteristics of airjet spun yarns. (10)
15. (a) Explain the principles of yarn formation in SIRO spinning and discuss the structure and properties of the SIRO yarns.

Or

- (b) (i) With suitable diagrams, explain the production of yarn using wrap spinning system. (12)
- (ii) The raw material requirement for wrap spinning system and characteristics of wrap spun yarn. (4)