C 3416

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

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. State the importance of delta zone in ring spinning.

2. What are the limitations of condensed yarn spinning?

3. If 2 yarns of 10s and one yarn at 20s are folded, calculate the resultant yarn count.

4. What do you mean by peripheral twist extent in rotor spinning?

5. Differentiate between the self pumping and external pumping in rotor spinning.

6. State the yarn forming principle in friction spinning.

7. What are the applications of air-jet yarns?

8. Differentiate between the wrap spinning and core spinning.

9. How the self twist yarns manufactured?

10. Differentiate between siro spun yarns and the conventional folded yarns.

PART B — (5 × 16 = 80 marks)

11. (a) With suitable sketches, give a detailed discussion on the salient features of modern ring frames, with respect to the various stages of operations.

Or

(b) With neat principle sketches, discuss the different methods of condensed yarn manufacture.

12. (a) With neat sketches, explain the working principle of rotor spinner with special reference to feeding, combing, fibre transport, fibre assembly, twisting and yarn withdrawal.

Or

(b) Explain the influence of rotor speed, rotor diameter, rotor diameter, design of doffing tube and opening roller speed on the characteristics of rotor yarns.

13. (a) With suitable diagrams, give a detailed account on the various machine developments taken place and their operation principles on friction spinning.

Or

(b) Discuss the influence of process parameters such as drum speed, friction ratio, suction air pressure, core sheath ratio, twisting efficiency and yarn withdrawal rate on the structure and characteristics of friction spun yarns.

14. (a) (i) Discuss the importance of fibre quality requirements for optimum spinning of air-jet spun yarns.

(ii) Discuss the developments taken place in air-jet spinning.

Or

(b) Discuss the influence of various process parameters such as nozzle air pressure, feed rate, draft distribution and ribbon width on the structure and characteristics of air-jet spun yarns.

15. (a) (i) Differentiate between the siro spinning and solo spinning principles.

(ii) Discuss the influence of machine variables on the spinning performance and yarn quality of siro-spun yarns.

Or

(b) Discuss on :

(i) Core-yarn production methods

(ii) Twistless yarns - manufacturing principles.
