N 1121

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2004.

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 is the principle of open end spinning?

2. Write short note on the false twist effect in rotor spinning.

3. Draw the structure of rotor and friction spun yarn.

4. Find the number of back doubling for the following data : Rotor diameter 35 mm, yarn count 16 Ne with twist multiplier 5.0.

5. The delivery rate of friction spinning system is independent of the fineness of the yarn produced. Comment on the statement.

6. Name any two spinning systems working on open end spinning principle?

7. Finer counts are not technically feasible in air jet spinning. Verify the statement.

8. What are the applications of PLY fil yarn?

9. What are the raw materials used in wrap spinning system?

10. What are the reasons for the advent of new spinning technologies?

PART B — (5 × 16 = 80 marks)

11. (i) What is the principle of condensed yarn spinning? (6)

(ii) Explain about the apron condensation technique for producing condensed yarn. (10)

12. (a) Discuss about the requirement of raw material characteristics such as length and length distribution, micronaire, bundle strength and trash content of sliver and their effect on the rotor yarn productivity and yarn quality. (16)

Or

(b) Discuss about :

(i) Design of rotor and its effect on yarn characteristics. (10)

(ii) Design of navel and its effect on yarn characteristics. (6)

13. (a) (i) Explain the principle of yarn formation in DREF-2 and DREF-3 machines. (12)

(ii) What are the technological limitations of friction spinning system? (4)

Or

(b) (i) How to produce speciality yarns using DREF-3 spinning system? (6)

(ii) What are the end uses of DREF-2 and DREF-3 yarn? (4)

(iii) What are the advantages of friction spinning system compared to ring and rotor? (6)

14. (a) (i) Explain the method of yarn production by air jet spinning technique. (12)

(ii) How is high draft possible in the roller drafting system used in air jet spinning machine? (4)

Or

(b) (i) Draw the structure of air jet and ring spun yarn and compare the hairiness and stiffness properties based on their structure. (10)

(ii) Explain the principle of production of yarn in PLY fil spinning. (6)

15. (a) (i) Explain about the mechanism of SIRO yarn production. (10)

(ii) Discuss about the characteristics of SIRO yarn in comparison with normal single and double yarn. (6)

Or

(b) (i) What is the operating principle of wrap spinning? (8)

(ii) Discuss about the technological and economic aspects of wrap yarn spinning. (8)
