C 3239

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

Second Semester

Textile Technology (Fashion Technology)

FT 1152 — YARN MANUFACTURE

(Regulation 2004)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Convert 50 Ne into denier.

2. Why is the textile strands specified in mass per unit length or length per unit mass instead of diameter?

3. Give any two process sequence to produce polyester & combed cotton blended yarn.

4. The feed material to the blow room line contains 4.6% trash. What will be the trash present in the output from the blow room line, if the overall cleaning efficiency of blow room line is 58%?

5. Name any two mechanisms by which the neps are reduced in the card.

6. What are the objectives of grinding of card cylinder wires?

7. The linear density of sliver lap is 55 g/m. What should be the draft given at the ribbon lap machine to get ribbon lap of linear density 50 g/m?

8. Name any four important differences in property between carded and combed yarn.

9. Write short note on false twist phenomena.

10. What are the objectives of doubling of spun yarns?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Classify the natural textile fibres with suitable examples. (12)

(ii) The weight of 100 m of strand is 1.48g. Express the strand in English count. (2)

(iii) The fineness of the fibre is 3.6 micronaire. Express in denier. (2)

Or

(b) (i) Discuss on any three important properties of staple fibres influencing the production of yarn. (12)

(ii) Express the textile strand in English count and tex if the linear density is 400 g/m. (2)

(iii) Define English count and Tex. (2)

12. (a) (i) With neat sketch explain the working of step cleaner. (12)

(ii) Calculate the production per scutcher per shift in kg for the following data :

Calendar roller speed : 10 m/mm.

Hank of the lap : 0.0015 Ne

Efficiency : 85% (4)

Or

(b) (i) Explain the working of any one type of mixer used in the blow room line. (12)

(ii) Calculate the trash present in the output material of the blow room line having three machines with individual cleaning efficiency of 25%, 35% and 25%. The trash present in the feed material is 3.6%. (4)

13. (a) (i) Explain with neat sketch the flock feed with double chute system. (10)

(ii) Explain the construction of licker-in and pre carding segments used in any modern card. (6)

Or

(b) (i) What are the factors deciding the selection of wires in card? (4)

(ii) Calculate the production (kg) per shift and total draft applied in the card for the following data :

Hank of feed lap	: 00015 Ne
Production rate	: 100 m/min
Hank of sliver	: 0.12 Ne
Waste removed at the card	: 5%
Efficiency	: 90% (12)

14. (a) With neat sketch explain the functioning of comber for cotton system.

Or

(b) (i) What are the objectives of sliver lap and ribbon lap machine? (6)

(ii) What is the use of pre comber draw frame in the preparatory for comber? (2)

(iii) Calculate the production (kg) of draw frame per shift for the following data :

Delivery rate	: 450 m/mm
Hank of feed sliver	: 0.117 Ne
Draft given at the draw frame :	8.2
Number of slivers fed	: 8
Efficiency	: 75% (8)

15. (a) (i) Explain on any drafting system used in the modern ring frames. Explain the importance of various elements of drafting system. (12)

(ii) How is the twist imparted in the rotor spinning machine? (4)

Or

(b) (i) With neat sketch explain the principle involved in doubling of yarn in Two for One twister. (12)

(ii) What is the use of navel in the rotor spinning machine? (4)