R 3634

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

Fourth Semester

Textile Technology

TT 1253 — FABRIC MANUFACTURE — I

(Regulation 2004)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   Differentiate random winding and precision winding principles.

2.   Enlist the types of tensioners used in winding.

3.   State the purpose of base bunch and nose bunch in pirn.

4.   What do you mean by pirn stripping?

5.   State the purpose of measuring motion in warping.

6.   Differentiate between direct and sectional warping.

7.   State the importance of marking motion in sizing.

8.   Coloured yarns are generally not dried on multicylinder drying zone of sizing machine. Give reasons.

9.   Define size take-up.

10. Differentiate drawing-in and tyeing-in.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the various stages involved in preparation of splice using pneumatic method with sketch.

    (ii) Compare and contrast the working principle of capacitance and photo-cell type of electronic yarn clearer.

Or

    (b) (i) Explain with sketch, the various types of tension devices used in winding.

    (ii) Explain the yarn clearer settings w.r.t. clearing limit, yarn count, material number and winding speed.

12. (a) (i) Explain with sketch, the working principle of pirn winder.

    (ii) A cotton sheeting cloth is 190 cm wide, and the weft crimp is 5%. If the loom on which it is made runs at 155 picks/min and attains an overall efficiency of 90%, calculate,

    (1) Weft insertion rate in m/min and

    (2) Mass of weft in kg/running metre of loomstate cloth, given that the linear density of weft is 36 tex and in loomstate cloth, there are 20 picks/cm.

Or

    (b) (i) Explain the mechanism of build up of a pirn with sketch.

    (ii) Discuss the salient features of auto coners.

13. (a) (i) Explain with a functional diagram, the working of various elements in beam warper.

    (ii) Discuss in detail the causes and remedies for various defects in warping beam.

Or

    (b) (i) Explain with sketch, the working of length measuring motion in warper.

    (ii) Explain the working principle of sectional warping machine.

14. (a) (i) Explain with sketch, the mechanism of multi-cylinder drying.

    (ii) Detail on a typical size recipe for processing 100% cotton yarn.

<div align="center">Or</div>

    (b) (i) Explain with sketch, the working of marking and measuring motion in sizing machine.

    (ii) Discuss the factors considered in selection of size recipe.

15. (a) (i) Explain with sketch, the mechanism of single-end sizing.

    (ii) Discuss in detail any four salient features of modern sizing machine.

<div align="center">Or</div>

    (b) A 20 tex cotton warp containing 3200 ends has 12% size added. In each kilogram of size paste, there are 80 g of solid ingredients (oven-dry mass). The maximum drying capacity of the drying zone is 450 kgs/hr . Calculate the maximum running speed which ensures that the regain of the sized yarn on the 100 m beam is 8%. Assume any other relevant data.