B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2003.

Fifth Semester

Textile Technology

TT 336 — TECHNOLOGY OF FABRIC MANUFACTURE — I

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Draw the arrangements of rollers in a roller reversing mechanism while weaving five end sateen on a tappet loom.

2. What are the limitations of tappet shedding?

3. For weaving which type of fabrics you will you pointed tie? Why?

4. Calculate the RPM of the loom if the average velocity of the shuttle is 46 Km/hr, degrees of Crank shaft rotation available for the shuttle to travel across the fabric is 135°, shuttle length 45 cm, cloth width 2 meters.

5. Why the heads should be levelled at Front Centre, while weaving filament warp?

6. What is casting out?

7. How will you vary the picking force in a cone over pick motion?

8. Why shuttles should be heavy?

9. What are the advantages and dis–advantages of Cam driven sley?

10. What is the function of oscillating backrest?

PART B — (5 × 16 = 80 marks)

11. A friction let–off motion used a total weight of 300 N. The full beam radius is 20 cm, ruffle radius 8 cm. The tension in the warp sheet should be 500 N. Determine the position of weight, when the beam is full, when it is half, and when it is almost empty. Beam Pipe radius 6 cm, chain is taken $1\frac{1}{2}$ lap, coefficient of friction between chain and ruffle is 0.14. The distance between fulcrum point and the chain on tight side is 5 cm.

12. (a) Explain the various methods that can be adopted to increase cover factor of a fabric in a loom.

Or

(b) Discuss how bumping occurs during weaving. Explain what happens to cloth fell position during bumping. How will you prevent it?

13. (a) Derive an expression for power required for picking.

Or

(b) Explain the programming systems used in electronic dobbies and jacquard.

14. (a) For weaving reversible fabrics which special jacquard is preferred. Explain the working of the same.

Or

(b) The fabric produced on a loom of 180 cm reed width running at 210 PPM has the following particulars : Warp 20 tax, Warp crimp 6%, Reed 40 S stock port reed, Weft 25 Tex, Weft crimp 10%, picks/cm 16. If the, loom efficiency is 85%. Calculate the loom production / 40 hour's in square meters and in Kilograms.

15. (a) Name eight common woven fabric defects. Give their causes and remedies.

Or

(b) Write short notes on the following :

(i) Temples for filament warp

(ii) Open shed dobbies

(iii) Weft fork for multi box looms

(iv) Shuttle checking devices.