Roll No. ..... Total No. of Pages : 3

BT-6/JX 8824

Knitting Technology

Paper : TT-308

Time : Three Hours] [Maximum Marks : 100

Note :— Attempt any **FIVE** questions in all, selecting at least **ONE** question from each section. All questions carry equal marks.

SECTION—A

1. (a) Differentiate between woven and knitted structures. Is it possible to completely dispense with woven fabrics. Justify your answer. 5,2

   (b) Compare the advantages and disadvantages of different types of knitting needles. Which one is widely used for single Jersey circular knitting ? 8,2

   (c) What are the functions of a sinker ? Explain using neat figures. 3

2. (a) Explain the functions of various cams in the cam system of a weft knitting machine. 6

   (b) How are the weft knitting machines classified ? 6

   (c) Give the knitting cycle of a bearded needle with proper figures. 8

SECTION—B

3. (a) What is laddering effect in plain knits ? 2

   (b) Define needle timing and state its importance in rib knitting. 5

   (c) How are the purl fabrics manufactured ? What are their properties and uses ? 10

   (d) Why does the rib width change with an increase in repeat ? 3

4. (a) How are Tuck and Float stitches prepared ? What are the various characteristics of Tuck and Float stitch structures ? 10

   (b) Give the structure and properties of the following weft knit derivatives :

   (i) PUNTO DI ROMA

   (ii) LACOSTE

   (iii) EIGHT LOCK

   (iv) FAIR ISLE

   (v) SWISS PIQUE. 5×2=10

SECTION—C

5. (a) A plain knitted fabric is produced from 80 Tex worsted yarn on a machine of 46 cm diameter with 4 needles/cm. Determine the mass/running meter of a fabric in the finished relaxed state. Given $K_c = 56$. 5

   (b) Define Tightness factor. State its significance. 3

   (c) Calculate the length in 'metres' of a plain single jersey fabric knitted at 14 cpcm and 20 wpcm on 20" diameter, 18 gauge machine having 110 feeders. The machine operates for 8 hours at 30 rpm and 90% efficiency. Also calculate the fabric width. 8

   (d) What is the role of yarn tension in knitting process ? How is it controlled during knitting ? 4

6. (a) What are the different types of knitting fabric defects ? Discuss their causes and remedies. 10

(b) Calculate the weight/square meter and weight/running meter of a plain knitted fabric assuming the suitable data. 10

SECTION—D

7. (a) Describe the knitting cycle of TRICOT warp knitting machine with proper figures. 10

(b) Give the structure and properties of a ATLAS fabric explaining the various overlap and underlap combinations. 5

(c) Differentiate between TRICOT and RASCHEL warp knitted structures. 5

8. (a) Compare warp knits, weft knits and woven fabric on the basis of the properties they exhibit. 10

(b) Describe the five basic lapping movement variations used in warp knitting alongwith their properties. 10