21819

3 Hours / 100 Marks   Seat No. ☐☐☐☐☐☐☐☐

Instructions :   (1)   All Questions are *compulsory.*

       (2)   Answer each next main Question on a new page.

       (3)   Illustrate your answers with neat sketches wherever necessary.

       (4)   Figures to the right indicate full marks.

       (5)   Assume suitable data, if necessary.

       (6)   Use of Non-programmable Electronic Pocket Calculator is permissible.

       (7)   Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

       (8)   Use of steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. Attempt any TEN :   **20**

   (a)   Define Courses and Wales.

   (b)   State the main reasons for the growth of a knitting industry.

   (c)   Give classification of weft knitting machines.

   (d)   Define stitch length and state its significance.

   (e)   State function of pattern drum and chain links.

   (f)   State the functions of cylinder and cam of weft knitting machine.

 (g) State functions of following knitting machines elements :

   (i) Sinker

   (ii) Presser bar

 (h) Enlist various principle stitches used in weft knitting.

 (i) State meaning of G.S.M. and give its formula.

 (j) State any two applications of warp knit fabric.

 (k) State the functions of the following :

   (i) Latch wire

   (ii) Trick plate

 (l) List down various knitting machine elements used on flat knitting machine and state their functions.

 (m) Enlist various basic properties of yarns used for knitting.

 (n) Draw loop diagram of tricot lap and give its chain link notation.

 (o) List down various quality test recommended for testing knitted fabrics.

2. Attempt any TWO :   **16**

 (a) Differentiate between woven and knitted fabrics.

 (b) Draw the latch needle and label name of parts. Explain knitting action of latch needle for loop formation.

 (c) (i) Explain passage of yarn on flat knitting machine with the help of a diagram.

   (ii) Classify Flat Bed Knitting Machine.

3. **Attempt any TWO :** 16

   (a) Describe knitting action of RIB knitting machine with neat sketch.

   (b) Explain the working of knitting elements for a single jersey knitting machine with neat sketches.

   (c) Draw the following weft knitting structures : (any **two**)

       (i) 1×1 RIB

       (ii) 2×2 PURL

       (iii) INTERLOCK

4. **Attempt any TWO :** 16

   (a) How float and tuck stitches are machine knitted ? Show by sketch position of needle with respect to that of feeder; when forming Float and Tuck stitches.

   (b) Draw following knitted structures with needle layout and knitting sequence :

       (i) Ponte-Di-Roma

       (ii) Milano Rib

   (c) If the sample analysis shows that the single jersey structure has 40 courses per inch, 28 wales per inch length of yarn for 50 stitches is 10.25 inches and the count of yarn is 20's cotton. Find the weight in 025 per square yard of this fabric.

5. **Attempt any TWO :** 16

   (a) (i) Compare warp knitting with weft-knitting.

       (ii) Explain basic warp knitting terms – overlap, underlap, open lap and closed lap.

   (b) Compare Tricot and Raschel machine.

(c) Calculate the production per hour of a two-bar machine running at 980 rpm at 88% efficiency. The top bar uses a 70 denier runner at 60" and bottom bar a 20 denier runner of 40" with the number of ends per bar being 4800, assume 120 rocks/hour.

6. **Attempt any TWO :** **16**

(a) (i) What is the meaning of tightness function and give its formula.

(ii) A single jersey fabric is made on a machine with 2000 needles with 28 courses per inch from 24^s cotton count and 72 stitches per foot. Calculate the weight per linear yard.

(b) Draw the lapping movement diagram for the following chain notation :

(i) $1 - 0 / 2 - 3 //$

(ii) $1 - 0 / 3 - 4 //$

(iii) $0 - 1 / 0 - 1 //$

(iv) $1 - 0 / 1 - 2 //$

(c) Explain any two defects and their remedies in knitted fabrics :

(i) Dropped stitches

(ii) Yarn breakages

(iii) Cutting and Whiskering

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