21222

3 Hours / 70 Marks   Seat No. ☐☐☐☐☐☐☐☐

15 minutes extra for each hour

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.
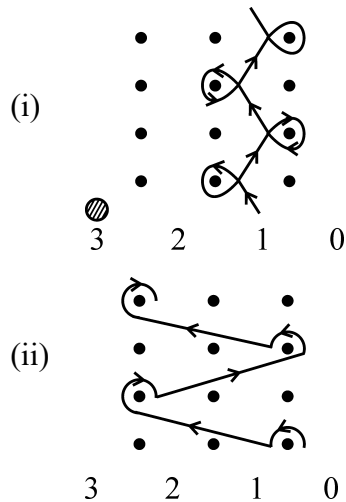
Marks

1.   **Answer any FIVE of the following :**   **10**

(a)   Explain Needle Loop and Sinker Loop with the help of a neat diagram.

(b)   Define courses and wales.

(c)   Define knit stitch and purl stitch.

(d)   Draw the loop structure for single jersey structure.

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

(f)   Define the Warp Knitting.

(g)   Define Stitch Length.

2. **Answer any THREE of the following :** 12

    (a) Compare woven and knitted fabric.

    (b) Draw the LATCH NEEDLE and label name of parts.

    (c) State the main characteristic features of RIB machine.

    (d) Give detailed classification of knitted machines and structures.

3. **Answer any THREE of the following :** 12

    (a) State the functions of following parts in warp knitting :

    (i) guide bar (ii) Needle bar (iii) Latch wire (iv) Trick plate.

    (b) Draw following structure :

    (i) 1×1 PURL STRUCTURE

    (ii) 1×1 RIB STRUCTURE

    (c) Compare Rib machine with single jersey machine.

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

4. **Answer any THREE of the following :** 12

    (a) State following terms in knitting :

    (i)   Open Loop

    (ii)   Close Loop

    (iii) Course Length

    (iv)   Stitch density

    (b) State the functions of following parts :

    (i)   Cylinder

    (ii)   Sinker

    (iii) Cam

    (iv)   Needle

(c) Find the chain notations for following lapping diagram.

(i)

3   2   1   0

(ii)

3   2   1   0

(d) A single jersey fabric is made on a machine with 2500 needles with 38 courses per inch from the 40's cotton yarn and 80 stitches per foot. Calculate the weight per linear yard.

(e) If the sample analysis shows that the single jersey structure has 30 courses per inch, 24 wales per inch, length of yarn for 50 stitches is 8.75 inches and the count of yarn is 15's cotton, find the weight in 02s per square yard of this fabric.

5. **Answer any TWO of the following :**   **12**

(a) Explain knitting cycle on INTERLOCK machine with the help of a neat diagram.

(b) Describe the knitting cycle on Rascheal knitting machine with the help of a neat diagram.

(c) A circular weft knitting machine having 108 feeders running at a speed of 30 rpm, is knitting fabric with a stitch length of 3 mm with 2568 needles in the machine. The efficiency of machine is 80% and count of yarn knitted is 40's. The fabric is knitted with 28 courses per inch. Calculate production in yards and pounds per hour.

6.   **Answer any TWO of the following :**   12

   (a)   Explain the effect of FLOAT and TUCK STITCHES on Fabric Properties.

   (b)   Give chain link notations of both guide bars of following warp knit structures :

      (i)   Full Tricot

      (ii)   Lock-Knit

   (c)   Calculate Fabric weight (*l*b) Linear yard, and fabric width if knitting fabric having following specification :

      (i)   Total Number of needles 3000

      (ii)   Stitch Length :– 0.15 inch

      (iii) W.P.I. :– 29

      (iv)   C.P.I. :– 24

      (v)   Yarn count – 30 Ne

————————————