# 22357

**23124**

**3 Hours / 70 Marks** Seat No. | | | | | | | | |

*Instructions* – (1) All Questions are *Compulsory.*

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

(3) Illustrate your answer 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 FIVE of the following:** **10**

a) Define 'course'.

b) Draw diagram of technical face side of single jersey structure.

c) Define tightness factor.

d) Draw flow-chart for manufacturing any type of non-woven fabric.

e) State the function of latch wire.

f) Give classification of weft knitting machines.

g) List down few favourable properties of non-woven fabric for garment production.

P.T.O.

**Marks**

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

a) Draw loop diagram of tuck stitch and explain how this stitch is produced.

b) Draw diagram of $1 \times 1$ Rib structure. Give graphical representation of the same.

c) Compare knitted fabric with woven fabric. (Any eight points)

d) Comment on arrangement of needles and tricks of Rib knitting machine and interlock knitting machine.

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

a) Draw diagram of float stitch. Explain how float stitch is obtained. Elaborate the effect of float stitches on fabric properties.

b) Calculate the production of a weft knitting machine in yards/ shift and lbs/shift from following data –

i) Cylinder rpm - 30

ii) No of feeders - 80

iii) Course per inch - 36

iv) Efficiency - 88%

v) Stitch length - 0.15"

vi) No. of needles - 2240

vii) Wales per inch - 32

viii) Count of yarn - $30^S$ cotton.

c) Calculate the GSM of a single jersey weft knitted fabric from following data –

i) CPI - 32

ii) WPI - 30

iii) Stitch length - 0.15"

iv) Count of yarn - $30^S$ cotton.

d) Explain the passage of warp on tricot warp knitting machine with the help of a neat diagram.

**Marks**

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

a) Draw structure and give lapping notation of following single bar structure –

i) Closed pillar stitch

ii) Open pillar stitch

iii) Closed 3 and 1 lapping

iv) Closed 4 and 1 lapping.

b) Classify non-woven fabrics into various categories; Draw diagram of needle punched non woven machine and label the parts.

c) Draw structure and give lapping notations of following double bar structure –

i) Reverse locknit

ii) Queen's cord.

d) With the help of a flow-chart explain the manufacturing process of chemical bonded non-woven fabric.

e) Elaborate various applications of warp knit fabrics.

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

a) Draw structure of interlock. Give graphical representation and diagramatic representation of the same. State properties of interlock machine.

b) Draw notations (loop diagram) of following structures and explain how they are knitted –

i) Pique poplin

ii) Punto-di-roma.

c) Elaborate causes and remedies of following defects in weft knitted fabric –

i) Holes or cracks

ii) Drop stitches

iii) Barre or horizontal stripe

iv) Vertical lines.

**Marks**

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

a) Explain the working of flat knitting machine with the help of diagram.

b) Elaborate the concept of design, cam order needle order using your own design.

c) Compare warp knitting with weft knitting with respect to following points –

i) Structure, appearance

ii) Fabric properties

iii) Yarns used

iv) Feed material

v) Production notes

vi) Machinery details

vii) Type of fabric i.e. form of fabric.

viii) Needles used, npi, etc.