Roll No. ..... **Total Pages : 06**

BT-4/M-20 **34061**

FABRIC MANUFACTURE-II

TT-204

Time : Three Hours] [Maximum Marks : 100

Note : Q. No. **1** is compulsory. Answer any *one* question from each of the remaining four Units. All questions carry equal marks.

1. (i) Which of the following motion is a secondary motion in an automatic shuttle loom ?

(a) Beat up
(b) Take up
(c) Automatic pirn change
(d) None of the above

(ii) The sley is primarily used for :

(a) Take up (b) Beat up
(c) Shedding (d) None of these

(iii) The correct unit of weft insertion rate is :

(a) metre (b) newton
(c) tex (d) Metre per minute

(iv) How many picks will be inserted if the r.p.m. of the crankshaft of a shuttle loom is 200 ?

(a) 100 (b) 200
(c) 50 (d) None of these

(v) The power of picking in a shuttle loom does not depend upon :

(a) Shuttle mass
(b) Reed width
(c) Crank shaft r.p.m.
(d) None of the above

(vi) The typical angle in degres of crank at which picking starts in a shuttle loom is :

(a) 0 (b) 80
(c) 270 (d) None of these

(vii) For a single lift single cylinder jacquard, the cylinder should turn :

(a) In every pick (b) In two picks
(c) In four picks (d) None of these

(viii) If a weave has 12 picks, then the most preferred shedding mechanism is by :

(a) Cam (b) Dobby
(c) Jacquard (d) None of these

(ix) The component selvedge gripper is a part of :

(a) Projectile loom (b) Rapier loom
(c) Airjet loom (d) None of these

(x) The most versatile shuttleless loom is considered for :

(a) Airjet (b) Projectile
(c) Rapier (d) None of these

(xi) Highest weft insertion rate can be achieved for :

(a) Projectile

(b) Rapierl

(c) Airjet

(d) Automatic shuttle loom

(xii) Which type of loom use Profile Reed ?

(a) Airjet

(b) Rapier

(c) Projectile

(d) Automatic shuttle loom

(xiii) Which of the following packages are preferred for wefts in shuttleless looms ?

(a) Cone (b) Ring Bobbins

(c) Pirn (d) None of these

(xiv) Which of the following yarn types is preferred for waterjet looms ?

(a) Cotton spun yarns

(b) Viscose spun yarns

(c) Polyester filaments

(d) None of the above

(xv) The fabric production (in metre) in a loom does not depend upon :

(a) Yarn count (b) R.P.M. of crank

(c) Picks per inch (d) None of these

(xvi) State the objectives of auxiliary motion.

(xvii) State the drawbacks of shuttle looms.

(xviii) Write *two* manufacture names of Electronic Jacquard.

(xix) Which type of shuttleless loom is preferred to weave 50,000 m plain woven fabric with regard to cost of production ?

(xx) State the names of secondary motions. **20×1**

Unit I

2. (a) Discuss the merits and demerits of shuttle loom. Also explain the different motions required for the functioning of the loom. **10**

(b) Explain the cam shedding mechanism for the production of plain woven fabrics with a neat labelled diagram. Also mention the ratio of cranks shaft to bottom shaft r.p.m. **10**

3. (a) Discuss the different types of stop motions used in the automatic loom and their utility for the fabric quality. **10**

(b) Describe the working principle of the FAST REED mechanism with neat and labelled diagram. **10**

Unit II

4. (a) Describe the need of the jacquard shedding. Also state the different types of mechanical jaquard with their characteristics. **10**

(b) Explain the working mechanism of the Double Lift Double Cylinder Jacquard with suitable diagrams. **10**

5. (a) Discuss the factors that affect shuttle velocity. Also derive a suitable equation for shuttle velocity. **10**

(b) Calculate the average shuttle velocity from the following particulars :

Width of warp in reed = 1.2 m, Effective length of shuttle = 30 cm, Loom speed = 240 picks/min and Degree of crank shaft rotation available for the passage of shuttle = 140º. **10**

Unit III

6. (a) Discuss the operating weft insertion principle for an airjet loom with suitable diagrams. **15**

(b) Discuss the merits and limitations of airject loom. **5**

7. (a) Discuss the working principle of weft and warp shed wave principles of multiphase looms. **15**

(b) Discuss the reasons of failure of multiphase looms in commercial purposes. **5**

Unit IV

8. Calculate the production of fabric (in metres) in 8 Hours for an airject loom from the following particulars :

Loom R.P.M. = 900, Loom Width = 180 cm, Warp and weft count = 40^s, Warp and weft contraction = 12%, Average stoppage time per hour = 7 minutes. **20**

9. Compare the typical weft insertion rate, loom width and power consumption for production square metre of fabric for different types of shuttleless looms. Also discuss their techno-economics aspects of productivity. **20**