

Roll No.

Total Pages : 7

BT-3/D-18

33130

FABRIC MANUFACTURING-I

Paper : TT-207-N

Time : Three Hours]

[Maximum Marks : 75

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

Compulsory Question

1. (a) Which type of package is delivered from a random winding machine ?

- (i) Cone
- (ii) Warper's beam
- (iii) Pirm
- (iv) None of the above.

(b) If a yarn fault has a length of 32 cm, then the fault is classified as per USTER CLASSIMAT is :

- (i) B
- (ii) C
- (iii) D
- (iv) E.

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- (c) Which one is the finest yarn ?
- (i) 20 Tex
 - (ii) 20 Ne
 - (iii) 20 Metric Count.
- (d) If a winding machine runs with a speed of 1500 m/min, then calculate the time required to produce a cone having 2 kg yarn of 30 tex (assuming 100% efficiency).
- (i) 67.54 min
 - (ii) 44.44 min
 - (iii) 57.61 min
 - (iv) None of the above.
- (e) Which type of winding machines need anti-patternin devices?
- (i) Precision
 - (ii) Random
 - (iii) None of the above.
- (f) Which type of warping machine requires lease reed ?
- (i) Direct
 - (ii) Indirect
 - (iii) Ball
 - (iv) None of the above.

(g) If a weavers beam has 6000 end and the creel capacity of the sectional warping machine is 600, then the optimum number of ends in each section will be.

(i) 10

(ii) 600

(iii) 100

(iv) 6000.

(h) Which of the fabric is preferred to be passed through a direct warping machine ?

(i) Yarn dyed patterned cotton fabrics

(ii) Denim fabrics

(iii) Cotton fabrics of poplin fabric

(iv) All of the above.

(i) Which property of sized yarn may lacks as compared with its parent yarn ?

(i) Tensile Strength

(ii) Bending Rigidity

(iii) Breaking Elongation

(iv) Abrasion resistance.

(j) What will be the effect of increase of sizing machine speed on size on add on % ?

(i) Increases

(ii) Decreases

(iii) Does not affected.

- (k) What is the most preferred size box temperature in 0° for starch based adhesives ?
- (i) 95
 - (ii) 65
 - (iii) 85
 - (iv) None of the above.
- (l) Which of the following weaves requires a straight draft?
- (i) 1/1 Plain woven
 - (ii) 3/1 twill
 - (iii) 4 end satin
 - (iv) 4/2 twill.
- (m) Which of the following packages used as an input for pirn winding ?
- (i) Cone
 - (ii) Ring Bobbins
 - (iii) Spool.
- (n) As per Stockport system, the reed count is
- (i) Number of dents per 2 inch
 - (ii) Number of dents per 1 inch
 - (iii) Number of dents per 10 com
 - (iv) Number of dents per 1 cm.

- (o) Carboxy methyl cellulose can be used as an adhesive for
- (i) Polyester
 - (ii) Nylon
 - (iii) Silk
 - (iv) Cotton.
- (15×1=15)

UNIT-I

2. (a) Discuss the features of a random winding machine. Also deduce a mathematical expression for traverse ratio. 10
- (b) A Random winding machine produces a cheese of following parameters

Traverse Length = 125 mm, Drum Scroll = 2, Drum diameter = 0.1 m, Surface speed of drum = 1600 m/min, empty package diameter is 50 mm. Then calculate the traverse ratio at the beginning of the package formation.

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3. (a) Discuss the methods used for re-joining of yarn in wing machines. Also discuss the working mechanism of an pneumatic yarn clearer. 10

- (b) Calculate the production in Kg/8 hour of the winding machine from the following data :

Yarn Count = 20^s, Winding Speed = 1800 m/min, Yarn in ring bobbin is = 110 grams, Yarn in cone is 3 kg, Number of clearing breaks is 18 per million meter, Splicing time = 3 Seconds, Ring bobbin change time = 1 second, doffing time = 4 minutes.

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UNIT-II

4. (a) Discuss the working mechanism of a sectional warping machine also mention its preferred application areas. 7
- (b) A mill required a fabric length of 12,000 m with width 160 cm, The specifications of the fabric are EPC = PPC = 30, Warp and weft = 40 Ne, warp and weft crimp = 10% and the creel capacity is 600 and the beam capacity of both ends are 300 kg. If a sectional warping machine will be used for the purpose, then calculate the number of weavers beam, number of sections per beam. 8
5. (a) Discuss the various types creels used in warping machines. Also mention their merits and demerits. 10
- (b) A mill has to produce 70,000 m fabrics of width 140 cm. The fabric specifications are EPI = PPI = 72, Count of warp and weft is 20 Tex and the crimp in both direction is 10%. The beam capacity for both types of beams is 300 kg and each cone a yarn content of 2.5 kg. The creel capacity is 600. If a direct warping machine is employed for this purpose then calculates the number of weaver and warper beam required. 5

UNIT-III

6. (a) Discuss the nature of stress developed on warp sheet in a loom. Also discuss the significance of weavability. 5
- (b) Discuss the significance of warp sheet tension in sizing machine. Also mention methods used to control the input tension. 10

7. (a) Discuss the modern method of drying used in slasher sizing machine. Also mention their advantages. 10
- (b) Suggest a suitable size recipe for 67:33 Cotton polyester blend yarn. 5

UNIT-IV

8. Explain the need of drawing in operation. Also discuss the principle of an automated drawing machine. 15
9. Discuss the utility of reed count. Also mention the drawing in order of 3/2 and 4 end satin. 15
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