* R M - 7 9 0 5 / 1 0 0 *

RM-7905

B. E. IV (Sem. VIII) (T.T.) Examination

May / June – 2010

Textile Production Management

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 4 (Sem. 8) (T.T.)**

Name of the Subject :

☛ **Textile Production Management**

☛ Subject Code No. : **7 9 0 5** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

(2) Answers to the **two** sections must be written in **separate** answer books.

(3) Figures to the **right** indicate full marks.

(4) Tie **two** sections **separately**.

Q1a.) Fill in the blanks : [10]

i. Machines are arranged in _____ in case of Product Lay-out.

ii. _____ layout is also known as functional layout.

iii. Generation of static charges _____ with increase in humidity in man-made fibres.

iv. Generally _____ yarn count is used for Warp & weft for denim fabric.

v. If diameter of warp & weft are assumed to be same, the space occupied by one intersection is given by p= _____.

vi. The diameter of yarn is given by _____ in Law's Expression.

vii. Due to _____ in humidity, drafting force during spinning process increases.

viii. The process of implementation of ISO 9001-2000 quality system will be started with the appointment of _____ at the unit level.

ix. Back tracking is the main problem in case of _____ layout.

x. _____ & _____ are the two methods of material handling.

Q1b.) Prove that the space occupied by one intersection i.e. $p=\sqrt{3}d$. Use this relationship to calculate the thread densities for a fabric having 2/2 1/2 twill weave using 40^s x 36^s yarn counts. Assume suitable data. [10]

Q2 .) Calculate 1. running efficiency 2. mass of yarn on full beam 3. mass of yarn on supply package 4. number of warping machines required to supply feed material to a weaving unit having 500 Rapier Looms. Use following following details : [15]

- M/c speed – 850 mts/min
- No. of ends/beam – 520
- Set length – 28000 mts
- End breakage rate – 0.34 / 1000 ends / 1000mts
- Time required to mend one end break – 0.55 min
- Time required to change full beam – 4.1 min
- Time required to change creel – 14 min
- Yarn denier – 72

Assume suitable data.

OR

Q2 .) A loom shed is having plain power looms running at 190 rpm. The frequency of warp breaks, weft breaks, shuttle changing and weft replenishment observed for 92000 picks are 10, 07, 31 and 42 respectively. Calculate weaver's work load, loom allocation, optimum loom efficiency. How many such looms are to be installed to produce 62000 kgs of fabric during the month ? [15]

Q3 .) Write Short Notes on : (Any three) [15]

i. Influence of humidity on processing of materials in different departments

ii. Types of building

iii. Factors affecting weaving efficiency

iv. Steps involved in implementation of ISO 9001-2000 quality system

Q4a). Answer the following :

i	What is IBI? What value of IBI is normally achieved in practice?	[2]
ii	If gauge of Speed frame is 220 mm, calculate length of machine with 168 spindles excluding drive and rear end.	[2]
iii	If 24s Ne yarn is produced with 20 TPI, calculate % contraction in the yarn.	[2]
iv	What is the single largest component of yarn cost?	[1]
v	Explain the terms ' Obsolence' and ' Depreciation'.	[2]
vi	Write the equation to calculate production of Comber.	[1]

Q4b). Prepare a spin plan for producing 24s Ne Carded warp and 26s Ne Carded weft using 25 mm staple. [10]

Q5a). Following data refers to Rotor spinning section in a mill: [6]

- Count – 18s Warp
- TM – 5.0
- Rotor RPM – 1,00,000
- Efficiency – 90%

Calculate production in terms of kgs/shift/spindle.
Calculate number of spindles required to produce 500kgs/shift.

Q5b). A comber department of mill has 12 machines , each consuming 5 HP. If the load factor is 0.8 and cost of power is Rs.8/- per unit , calculate power cost per month of 30 days. The running efficiency of department is 90%. [5]

Q5c). Calculate number of fibers in yarn cross section for 50:50 and 67:33 P:C blend if Polyester used is 44 mm long and 1.2 Denier where as Cotton used is 38 mm long and of 4.2 micronaire. Give your comments on these blends. [4]

OR

Q5a). Prepare a production schedule to produce 800 kgs of semi combed Warp and 600 kgs of semi combed weft of 64s Ne. Calculate input required at blow room. Assume suitable data if required. [10]

Q5b). An equipment is purchased for Rs.12, 000/- . If the estimated life span is 5 years and scrap value is Rs.2000/- Calculate year wise depreciation charges using Sum of years digit method. [5]

Q6). Write Short Notes on : (Any three) [15]

i. Elements of Capital cost
ii. SWOT analysis of Indian Textile Industry
iii. Break even analysis & its significance
iv. Selection of TM for blends.
