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SE-8314

B. E. III (Sem. V) (T. T.) Examination

May / June – 2011

Modern Yarn Production

(New Course)

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. 3 (Sem. 5) (T.T.)

Name of the Subject :

☛ Modern Yarn Production (New)

☛ Subject Code No. : 8 3 1 4 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

1. **Answers to the two sections must be written in separate answer books.**
2. **Figures to the right indicate full marks.**
3. **Tie two sections separately.**

SECTION I

1 (a) Answer in brief:

i. The creel of the Turbo Stapler should be slung atleast 12-14 ft above the floor. Why? **[02]**

ii. For processing of acrylics on Turbo Stapler it has been found that the bottom intermediate roller is better made of a phenolic resin. Why? **[02]**

iii. The breaker bars of Turbo Stapler are made of which substance? **[01]**

iv. Give the pressure settings for Turbo Stapler. **[03]**

v. Enlist the functions of the Heat-Stretch zone in Turbo Stapler. **[02]**

(b) Elaborate on processing details for Tow-to-Sliver Stretch breaking on a Turbo Stapler. **[10]**

2.(a) Suggest actions for reducing slub-like thick faults for polyester-cotton blend. **[05]**

(b) Describe with neat diagram Courtauld's design Tow-to-Top Converter. **[10]**

OR

2(a) Suggest changes in the processing at ring frame to avoid the formation of crackers. **[05]**

(b) Discuss the factors which should be considered for the control of yarn hairiness during processing of manmade and its blend on ring frame. **[10]**

3. Write short notes on : (any three) **[15]**

i. Blending attachment – Pacific converter

ii. The variable cut unit – Pacific converter

iii. Heat-stretch-unit – Pacific converter

iv. Crimping.

SECTION – II

4 (a) Answer the following :

i. If the rotor RPM is 80,000 and yarn required is of 20TPI , calculate Yarn delivery speed in terms of inches/min. [2]

ii. The air pressure at source of supply is _____ where as at nozzle is _____ in Air jet spinning. [2]

iii. DREF – III has _____ drafting system. [1]

iv. Vortex spinning operates at the speed of _____ [1]

v. Draw cross section of nozzles used for Air jet spinning [2]

vi. The strength of rotor yarn is _____ than Ring frame yarn and evenness is _____ than ring yarn. [2]

(b) With a neat sketch describe Principle of Yarn formation on Rotor Spinning machine. [10]

5.(a) Explain the structure of Rotor yarns with neat sketch. [6]

(b) Compare the properties of Fabric obtained from Rotor yarn as against that from Ring yarn. [5]

(c) State the advantages of rotor spinning. [4]

OR

5. (a) With a neat sketch describe principle of yarn formation on Air jet spinning. [10]

(b) Discuss the limitations of air jet spinning. [5]

6. Write short notes (ANY THREE) [15]

i. Vortex Spinning

ii. Structure of Air jet yarn

iii. Spin box & its important parts on Rotor spinning

iv. Features of Modern Rotor spinning machine