14690
B. Tech 4th Semester Examination
Yarn Manufacture-II (O.S.)
TE-4003

Time : 3 Hours \hspace{1cm} Max. Marks : 100

The candidates shall limit their answers precisely within the answerbook (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt FIVE questions in all selecting atleast one question from section A, B, C and D. Section E is compulsory and user of non-programmable calculator is allowed.

SECTION - A

1. (a) Mention the objective of combing. Explain the principle of combing with neat & clean diagram. (12)
   (b) Mention the important setting that affect the noil extraction at combing machine. (8)

2. (a) How will you assess the performance of a combing machine. (10)
   (b) Discuss latest developments occur in a combing machine along with their significance. (10)

SECTION - B

3. (a) What is bobbin leading and flyer leading principle at simplex. Which system of winding is more popular and why? (10)
   (b) Discuss the function of any five elements of a drafting system. (10)

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4. (a) Design a cone drum profile used on simplex by assuming necessary data. (10)

(b) Calculate the production of a simplex machine in kg/shift/ machine if spindle rotating at 800 rpm and producing a roving of 1.2 Ne with a TM of 0.9 The efficiency of the machine is 94% and machine have 120 spindles. (10)

SECTION - C

5. (a) Draw the passage of material on a ring frame. Discuss the principle of twisting at ring frame. (12)

(b) Discuss the causes of end breaking in ring spinning along with their remedies. (8)

6. (a) Give an analysis of various forces acting between ring and traveller. (10)

(b) What is compact spinning? Mention its advantage over ring spinning. (5)

(c) Discuss different type of traveller with their suitability. (5)

SECTION - D

7. Explain the principle of Rotor spinning with suitable diagram. Give a comparative assessment of rotor yarn with ring spun yarn. (20)

8. Explain the principle of Murata air-jet spinning with neat & clean diagram. Also give a comparative assessment of yarn properties of air-jet yarn and ring spun yarn. (20)

SECTION - E

9. (a) Mention the function of top comb.

(b) Mention the level of draft and doubling in a ribbon lap machine.
(c) Why false twister is used at simplex?

(d) Mention the level of TM for cotton and polyester roving at simplex.

(e) Mention the function of spacer in ring frame.

(f) What is Bonda Waste?

(g) Mention the count range at rotor and air-jet spinning machine.

(h) What is a Rotor?

(i) Define break draft.

(j) What is detachment setting?  (10×2=20)