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Printed Pages : 7

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BT-4 / M-17

YARN MANUFACTURING-II

Paper–TT-202 A

Time allowed : 3 hours] *[Maximum marks : 100*

Note : *Attempt **five** questions in all, selecting **one** question from each unit. **Question no. 1 is compulsory.***

1. (i) The type of hook in a lap meant for a comber should be
   (a) Leading
   (b) Trailing
   (c) Both end hook
   (ii) Decrease in noil% at comber will result in
   (a) Higher short fiber elimination
   (b) Lower short fibre elimination
   (c) No difference
   (iii) Preferable pre-comber draft lies between
   (a) 7-10
   (b) 15-30
   (c) 35-50
   (d) 60-80
   (iv) If detaching setting is increased, comber noil
   (a) increases
   (b) decreases
   (c) remains same

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(v) Which element is not associated with speed frame ?
   (a) Bobbin (b) Cots
   (c) Traveller (d) Spacer

(vi) The rotational speed (rpm) of package is higher than flyer for
   (a) Spindle Leading
   (d) Bobbin leading principle

(vii) The roving twist used for synthetic fibre is normally
   (a) lower
   (b) higher
   (c) equal to cotton fibre to produce same count

(viii) RPM of flyer in a modern speed frame is in the range of
   (a) 150-250 (b) 300-550
   (c) 600-850 (d) 900-1150

(ix) Package of ringframe is known as known as
   (a) lap (b) sliver
   (c) roving (d) cop

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(x) In ISO standard, the traveller number is defined as the mass, in grams of

(a) 10 travellers

(b) 100 travellers

(c) 1000 travellers

(d) 10000 travellers

(xi) The maximum practical limit of spindle speed in a commercial cotton ring frame is around

(a) 5000 rpm

(b) 10000 rpm

(c) 20000 rpm

(d) 40000 rpm

(xii) Maximum traveller speed achieved in ringframe is about

(a) 10 mt/sec

(b) 20 mt/sec

(c) 40 mt/sec

(d) 60 mt/sec

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(xiii) Doubling implies twisting of

(a) two yarns

(b) three yarns

(c) four yarns

(d) more than one yarn

(xiv) Two yarns of 12 Ne and 16 Ne are plied together. The resultant count will be

(a) 6.8 Ne

(b) 12. 8 Ne

(c) 18.8 Ne

(d) 28.8 Ne

(xv) When two cotton single yarns are doubled to make knitted fabric, the amount of twist will be approximately

(a) $\frac{1}{4}$ of the single yarn twist

(b) $\frac{1}{2}$ of the single yarn twist

(c) $\frac{3}{4}$ of the single yarn twist

(d) equal to single's twist.

(xvi) How does lap liner density influence the noil% of a comber?

(xvii) Write down the process sequence from carding to speed frame to produce combed yarn.

(xviii) What are the objectives of a speed frame ?

(xix) Mention the relation between twist, spindle rpm and delivery rate of front roller with reference to a ring frame.

(xx) Why is balloon control ring used in ring frame ? 20

Unit–I

2. (a) Write down the sequence of operation of a rectilinear comber with diagram. 10

(b) Calculate the production in kg/hour of a comber working with following particulars :

Feed/nip 4.2 mm, Noil% 16%, Lap fed - 72 ktex, Nips/min-400, no of heads-8, Efficiency -90%. 10

3. (a) Explain the machine and process variables on the quality of combed sliver. 10

(b) Discuss on "combed sliver faults and its control." 10

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Unit–II

4. (a) Discuss various tasks performed by speed frame with explanation of any one of them. 10

(b) What do you understand by "RATCHING" in roving frame? What is its impact on roving quality ? 10

5. (a) Explain developments in speed frame. 10

(b) Compare the advantages and disadvantages of 3/3 and 4/4 drafting system as used in speed frame. 10

Unit–III

6. (a) Draw neat and clean diagram to show the passage of material through different elements of a ring frame and explain the working principle. 10

(b) Compute the production/day of a ring frame from following particulars :

Yarn count : 30 Ne ; Twist multiplier : 4.0; Spindle rpm : 17000; No of spindle : 1008 ; Machine efficiency : 90%

7. (a) Explain spinning geometry. 10

(b) Discuss developments on ring frame. 10

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Unit–IV

8. (a) What is twist-on-twist and weft-on-weft yarns ? Explain with examples. Also compare the method of doubling-twisting between a ring doubler and two-for-one twister. 10

(b) Discuss different styles of threading with neat diagrams with reference to wet doubling process. 10

9. (a) Show the material flow diagram on a ring doubler and TFO twister alongwith working principle. 10

(b) Mention different types of double yarn defects and their remedies. 10