Roll No. ..... Total Pages : 7

BT-3/D-18 **33060**

YARN MANUFACTURING–I

Paper : TT–205

Time : Three Hours] [Maximum Marks : 100

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 of Section A is compulsory.

SECTION–A

1.(A)(a) Uniclean associates to : (1×15=15)

(i) Blow Room.

(ii) Carding machine.

(iii) Draw frame.

(iv) Speed frame.

(b) The draft between feed roller and licker-in in a carding machine is approximately.

(i) 100

(ii) 500

(iii) 1000

(iv) 2000

(c) Linear density of a sliver lies in the range of :

(i) 1.5 ~ 2.5 g/m

(ii) 3.5 ~ 4.5 g/m

(iii) 8 ~ 10 g/m

(iv) 14 ~ 16 g/m.

(d) Space in between cylinder and flat increases at :

(i) The entrance zone.

(ii) The exit zone.

(iii) Both the entrance and exit zone.

(iv) Middle zone of cylinder and flat.

(e) Heal and Toe arrangement relates to :

(i) Ginner

(ii) Card

(iii) Draw frame

(iv) Speed frame.

(f) Combing waste is affected by :

(i) Step gauge

(ii) Top comb depth

(iii) Feed/nip

(iv) All of these.

(g) Combing does not remove :

(i) Neps

(ii) Short fibres

(iii) Trash

(iv) Coloured fibres.

(h) RPM of flyer in a modern speed frame is in the range of :

(i) 150 ~ 250

(ii) 300 ~ 550

(iii) 600 ~ 850

(iv) 900 ~ 1150.

(i) Package of ring frame is known as :

(i) Lap

(ii) Sliver

(iii) Roving

(iv) Cop.

(j) Joining of single yarn ends in modern winding machine is performed by :

(i) Opening and twisting of Yarn end

(ii) Knotting of yarn end

(iii) Opening and knotting of yarn end

(iv) None of these.

(k) Amount of total draft employed by a speed frame is about :

(i) 2

(ii) 10

(iii) 30

(iv) 40.

(l) Twist multiplier for polyester roving is :

(i) 0.6

(ii) 0.9

(iii) 1.2

(iv) 1.5.

(m) Floating condenser is used on :

(i) Comber

(ii) Simplex

(iii) Ring frame

(iv) Ring doubler.

(n) Overall draft employed in a comber lies between :

(i) 2-4

(ii) 5-8

(iii) 9-18

(iv) 20-28.

(o) Spindle speed in a commercial cotton ring frame is around :

(i) 5000 rpm

(ii) 10,000 rpm

(iii) 20,000 rpm

(iv) 40,000 rpm.

(B) (a) What is the function of calender roll on a blow room line ?

(b) Suggest trash to lint ratio in licker-in waste.

(c) Define break draft and main draft of a draw frame.

(d) Mention the relation among twist/inch, twist factor and count of a yarn.

(e) Classify twist according to direction. (1×5=5)

SECTION–B

2. (a) What is bale management ? How can it be effectively carried out ? 10

(b) Mention different methods of blending along with merits and demerits of each method. 10

3. (a) What are the objectives of a carding machine ? With a suitable diagram, explain the working of a modern card and mention the function of individual parts. 10

(b) What is an autoleveller ? Discuss short, medium and long term autoleveller at carding machine. 10

SECTION–C

4. (a) Discuss how irregularities of drafted material can be measured. What is the effect of roller slip, roller vibraition and amount of draft on the irregularities? 10

(b) Explain different drafting systems with neat sketch. 10

5. (a) With the help of neat sketch, explain combing cycle. 10

(b) Why is even number of passage recommended between carding and combing ? 5

(c) Give an estimate of the role of pre-comb draft and fibre presentation on combing quality. 5

SECTION–D

6. (a) Describe the building mechanism of a speed frame. 10

(b) The weight of material on a roving bobbin is 2.4 kg. The roving hank is 600 Tex. If delivery rate is 20 m/min, how much time will be required to build the bobbin ? 5

(c) What is bobbin leading and flyer leading concept ? Which is used nowadays and why ? 5

7. (a) Discuss different types of top arm drafting systems. 10

(b) Discuss various factors on which spacer size depends. 5

(c) Discuss different types of travellers. 5

SECTION–E

8. (a) What are the objectives of plying ? How do folded yarns differ from single yarns in respect of various properties? 5

(b) What are Ring doubler and TFO ? Differentiate between the two. 10

(c) Discuss different methods of yarn doubling operation. 5

9. (a) Describe different types of winding machines along with their working principle. 10

(b) What is maintenance schedule ? What is its utility ? Discuss the maintenance schedule of all types of machineries in spinning. 10