17462

21314

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Answer any <u>FIVE</u> of the following: **20**

a) With the help of a neat diagram explain the passage of material in the Ribbon Lap Machine.

b) Explain the importance of number of passages in combing preparatory.

c) Explain how detaching and piecing is done in the combing process.

d) Describe the passage of material on the Lap frmur with a neat diagram.

e) Explain the various terms used to describe the degree of combing.

Marks

f) Explain the construction of the half-lap on the combing machine.

g) What is 'detachment setting' on the comber. At what position on the Index wheel this setting is done. What gauge is used to do this setting. What are the maximum and minimum values of this setting.

2. Answer any <u>TWO</u> of the following: **16**

a) Explain the combing cycle with help of a chart showing the motions of the various elements of the combing process, with reference to the Index wheel.

b) State the features of a Modern Comber.

c) A comber works with the following particulars.

feed/nip - 0.2 inches.

nips/min - 120

Noil % - 11.5%

No. of needs - 6

efficiency - 78%

Find the comb production/hr in kgs.

3. Answer any <u>TWO</u> of the following: **16**

a) Explain the passage of material through speed frame and its working with the help of a neat diagram.

b) State the advantages and disadvantages of the three-roller and four roller drafting system on the speed-frame.

c) Explain the construction of the flyer spindle and bobbin on the Speed Frame.

Marks

4. Answer any TWO of the following: **16**

a) Explain the twisting mechanism on the Speed Frame. How is the twist calculated? Explain the factors to be considered in determining optimum twist in roving.

b) Explain the sun and planet, differential motion on Speed Frame.

c) Find the production per spindle on a Speed Frame with the following particulars -

Spindle Speed : 1200 rpm

hank delivered : 0.8

twist multiplier : 1.4

efficiency : 85%

Also find the production of the above machine in 1bs/shift, if the machine has 100 spindles.

5. Answer any TWO of the following: **16**

a) Write a note on Rings and Travellers.

b) A Ring Frame runs at 12000 rpm. with a front roller delivery of 450 inches/min. If the bare bobbin diameter is one inch and Ring diameter is 1.6 inches, what is the traveller speed.

c) Explain 'Winding and Twisting' in a Ring Frame.

Marks

6. Answer any <u>TWO</u> of the following: **16**

a) Explain the importance of the following in the Ring Frame.

i) Nose bar

ii) Inclination of roller stand

iii) Lappet and thread wire guide.

iv) Traveller clearer

b) Explain 'Spinning Geometry' on the ring frame.

c) Calculate the production per shift of 8 hours in kgs. of a Ring Frame having 400 spindles spinning 30s count yarn with the following particulars -

Spindle speed - 10,500 rpm.

Twist Multiplier - 4.4

Efficiency - 88%

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