

22365

11819

3 Hours / 70 Marks

Seat No.

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- 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following: **10****
- a) State objectives of carding.
 - b) A carding machine is working with a mechanical draft of 100. Calculate the actual draft if waste extracted at card is 5%.
 - c) State objects of draw frame.
 - d) Give roller setting and draft distribution of 4 over 4 drafting system.
 - e) A draw frame having a draft of 6.5 has a doubling of 6. Calculate the hank of silver delivered if hank of silver fed is 0.16.
 - f) List down various combing preparatory sequences followed in industry.
 - g) State function of top comb.

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- 2. Attempt any THREE of the following.** **12**
- a) (i) Draw diagram of carding action, stripping action and doffing action at card.
 - (ii) A carding machine having draft of 106 is fed with a lap of 0.0015 hank. Calculate the hank of sliver delivered if waste extracted at card is 5%.
 - b) Describe the passage of cotton through a draw frame machine with the help of a neat labelled diagram.
 - c) Describe how auto levelling improves sliver quality at draw frame.
 - d) Draw schematic diagram of comber and label the parts.
- 3. Attempt any THREE of the following:** **12**
- a) State any four differences of lap feed and chute feed.
 - b) State different factors which influence card clothing.
 - c) Describe various salient features of a modern draw frame.
 - d) Describe passage of cotton through lap former with the help of a neat diagram.
 - e) Explain the effect of lap thickness and fibre parallisation in lap on combing operation.
- 4. Attempt any THREE of the following:** **12**
- a) State the importance of comb roller on modern card. Describe working of any web collecting device on modern card.
 - b) State range of following settings on card
 - (i) Feed plate to licker-in
 - (ii) Licker into cylinder
 - (iii) Cylinder to flats
 - (iv) Cylinder to doffer.State effect of there settings on carded sliver quality.
 - c) Describe any modern drafting system on a draw-frame with the help of a neat diagram.

- d) Describe effect of following settings on % of noil extracted at comber.
 - (i) Step gauge setting
 - (ii) Distance gauge setting
- e) Describe forward feed and backward feed at comber.

5. Attempt any TWO of the following: 12

- a) Describe the working of carding machine with the help of a neat diagram.
- b) Calculate the production of a carding machine using following data. (kg/shift of 8 hr)
 - (i) Doffer speed - 42 rpm
 - (ii) Doffer diameter - 27"
 - (iii) Efficiency - 88%
 - (iv) Mechanical draft - 108
 - (v) Hank of lap fed - 0.00165
 - (vi) Waste collected at card - 5%
- c) Describe combing cycle with reference to index wheel on cylinder shaft of comber.

6. Attempt any TWO of the following: 12

- a) Calculate production of single delivery draw frame from following data.
 - (i) Front roller speed - 200 rpm
 - (ii) Front roller diameter - 1.5" (inch)
 - (iii) Tension draft between front roller and coiler calender roller - 1.05
 - (iv) Hank of sliver delivered - 0.18
 - (v) Efficiency - 85%

- b) Calculate production of Lap former in kg/shift of 8 hrs from following data.
- (i) Feed Sliver hank - 0.12
 - (ii) No. of doublings - 24
 - (iii) Draft - 1.25
 - (iv) Delivery speed - 90 yards/min
 - (v) Efficiency = 85%
- c) Calculate production of a comber in kg/shift of 8 hours from following data.
- (i) Nips/min - 310
 - (ii) Weight/yard of lap = 70 gm/yd
 - (iii) Feed per nip = 0.24 inch
 - (iv) Efficiency = 90%
 - (v) Noil% = 15%
 - (vi) Number of heads = 8
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