313345

24225

3 Hours / 70 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) 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.

(8) Use of Steam tables, logarithmic, Mollier's chart is permitted.

Marks

1.   Attempt any FIVE of the following :   **10**

a) State the objectives of carding process.

b) Calculate the hank of sliver if weight of sliver is 5 gm/mt.

c) State the objectives of card stripping.

d) Give the modern lap preparation process flow chart.

e) Draw and label 3 over 4 drafting system

f) State the objectives of Ribbon lap machine.

g) State the objectives of draw frame process.

Marks

2.   **Attempt any THREE of the following :**   12

a) State any four modern development in carding.

b) State the influence of the following machine components on combing performance

  i)   Feed distance moved per cycle

  ii)   Type of feed

  iii) No. of points on comb.

c) Discuss the following parts of carding machine :

  i)   Flats

  ii)   Doffer

  iii) Cylinder

d) Describe with neat sketch working of sliver lap machine.

3.   **Attempt any THREE of the following :**   12

a) State the effect of various settings at carding on sliver quality.

b) State any four modern developments in comber.

c) Explain the procedure to do setting of drafting roller at draw frame roller.

d) Calculate the production of ribbon lap machine from following particulars in kg/shift

  i)   Lap roller diameter = 16"

  ii)   Lap roller speed = 30 rpm

  iii) Weight of lap = 75 gm/mtr.

  iv)   Efficiency = 60%

Marks

4.   **Attempt any THREE of the following :**   12

   a) Explain in detail principle of roller drafting.

   b) Explain in detail card clothing.

   c) State any four sliver defects and their causes and remedies.

   d) State the influence of any four settings at comber on combing performance.

   e) State the effect of following lap preparation process on combing performance ;

   i)   Evenness of lap sheet

   ii) Pre-comb draft

5.   **Attempt any TWO of the following :**   12

   a) Calculate production in kg/shift of 7.5 hrs with following data;

   i)   Speed of doffer = 35 rpm

   ii) Diameter of doffer = 27"

   iii) Hank of lap sheet = 0.0012

   iv) Total draft of carding = 100

   v)   Efficiency = 82%

   b) Describe with neat sketch working of autoleveller at draw frame to maintain sliver hank.

   c) Describe with neat sketch operation sequence of rectiliner comber.

Marks

6.   **Attempt any <u>TWO</u> of the following :**   **12**

   a)   Describe with neat sketch carding machine.

   b)   Calculate production of comber machine in kg/day with following data;

      i)   Nips/min = 400

      ii)   Feed/nip = 7.5 mm

      iii)   Lap weight = 80 gm/mtr.

      iv)   Noil extraction % = 17%

      v)   Efficiency = 17%

      vi)   No. of heads = 8

   c)   Calculate production of draw frame in kg/shift with following data;

      i)   Speed of front roller = 250 rpm

      ii)   Diameter of front roller = $1\frac{1}{3}$"

      iii)   Hank of sliver fed = 0.11

      iv)   Machine draft = 6.5

      v)   Efficiency = 82%

      vi)   No. of doublings = 6

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