

22461

12425

03 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 objects of roving frame.
- b) State the function of presser on roving frame.
- c) Front roller of speed frame has diameter of 28 mm and rpm 30. The rpm of flyer is 1000. Calculate the twist per inch.
- d) State function of spacer on ring frame machine.
- e) State the importance of binding coils and its ratio with winding coil.
- f) Explain the concept of traveller lagging.
- g) State functions of building mechanism on ring frame.

P.T.O.

2. Attempt any THREE of the following : 12

- a) Describe the passage of cotton on speed frame machine with the help of a neat labelled diagram.
- b) State objectives of building mechanism on speed frame machine and explain in brief how these objectives are achieved.
- c) Give detailed account for automation at roving frame with respect to –
 - i) Doffing
 - ii) Piecing
 - iii) Cleaning
- d) Draw diagrams of different types of rings used on ring frame machine.

3. Attempt any THREE of the following : 12

- a) Elaborate difference between bobbin leading and flyer leading principle of winding with the help of a neat sketch.
- b) List down different change places on roving frame. Elaborate any two with the help of neat sketches.
- c) Calculate production of roving frame in pounds / shift of 8 hours from following data
 - Flyer speed - 1200 rpm
 - Hank of roving produced - 1.5 Ne
 - Twist Multiplier (T.M.) = 1.1
 - No. of spindles - 120
 - Efficiency - 85%
- d) With a neat labelled sketch, explain the passage of cotton through ring frame.
- e) Elaborate different types of build of yarn package with the help of neat diagrams.

4. Attempt any THREE of the following : 12

- a) Elaborate drafting system on roving frame with the help of a neat diagram.
- b) Explain the importance of balloon control rings on ring frame machine with neat sketch.
- c) Draw diagrams of different types travellers. State their importance.
- d) State function of traveller and ring on ring frame.
- e) State function of traveller clearer. Elaborate the meaning of traveller number.

5. Attempt any TWO of the following : 12

- a) Elaborate in detail modern developments on roving frame.
- b) Explain various causes and remedies of end breaks in ring spinning.
- c) A mill record of hank meter for a day shows the following values for count-wise production. Each frame has 440 spindles.

28^s carded 22.6 hank 8 frames

36^s combed 21.5 hank 12 frames

50^s combed 23.5 hanks 20 frame

Find the total production for a mill for these counts. Also calculate average count.

6. Attempt any TWO of the following : 12

- a) Elaborate various features of a modern ring frame.
 - b) A ring frame works at 11000 rpm and produces 40^s yarn. The machine has 400 spindles and uses T.M. of 4.1. If the machine efficiency is 91%, find the production per shift of 8 hours.
 - c) Describe the passage of material through Ring frame machine with neat sketch.
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