17568

11819

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) 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 TEN of the following: **20**

a) Explain how this yarn is produced? $3/2/80^{s}$; 24 tpi S; 18 tpiZ.

b) Two yarns of 12^{s} and 18^{s} are doubled. Find the count of resultant doubled yarn.

c) State various properties of doubled yarn.

d) State objects of winding.

e) Define –

(i) Traverse ratio

(ii) Angle of wind.

f) What is patterning?

g) State principle of yarn formation in open end spinning.

Marks

h) What is back doubling?

i) State the speeds of following elements of rotor spinning machine.

(i) rpm of opening rollers

(ii) rpm of rotor

(iii) delivery speed (mt/min)

j) State the function of perforated drum in DREF spinning.

k) State the principle of Wrap spinning.

l) State principle of Siro spinning.

m) State characteristics of Hosiery yarn.

n) What is splicing? What are the advantages of splicing?

o) List down various important aspects of rotor to be taken into consideration.

2. Attempt any TWO of the following: **16**

a) Describe the working of two for one twister with the help of a neat labelled diagram. What are the advantages of two for one twister over conventional ring doubler.

b) Describe drum winding and precision winding machines characteristics. Elaborate the advantages and disadvantages of the same.

c) Describe the passage of cotton through rotor spinning machine with the help of a neat diagram.

3. Attempt any FOUR of the following: **16**

a) Describe in detail production of viole yarn.

b) What are the functions of yarn cleaver on winding machine. How yarn is cleared? List down various types of yarn cleaver.

c) List down various steps involved in open end spinning.

d) What are wrapping fibre? State the factors on which number of wrapping fibres depend?

e) Explain how twist is inserted in self twist spinning process?

f) Explain the working of Repco spinning.

Marks

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

a) List down different types of fancy yarns. Explain working of a fancy doubler with the help of a neat diagram.

b) Explain various features of a modern winding machine.

c) Explain following aspects of rotor spinning.

(i) Types of navel

(ii) Twist insertion

(iii) False twist effect

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

a) Explain following aspects of DREF III spinning with the help of a neat diagram.

(i) Operating principle

(ii) Material feed

(iii) Opening of material

(iv) Fibre transportation and collection

(v) Twist insertion and yarn formation

b) Describe construction and working of rotor. Describe the effect of rotor specification, diameter of rotor, speed of rotor on properties of OE yarn.

c) Describe the principle of Air-Jet spinning with the help of a diagram. Elaborate on the following aspects.

(i) raw material requirement

(ii) characteristics of yarn produced

Marks

6. Attempt any TWO of the following: **16**

a) (i) State raw material requirement for open end spinning (Rotor Spinning.)

(ii) Calculate the production per shift of 8 hours of an open end spinning (Rotor spinning machine) from following data.

(1) Rotor speed – 45000 rev/min.

(2) Count of yarn spun = 25^s Ne

(3) Twist factor - 4.5

(4) Efficiency – 95%

(5) No. of positions – 50

b) Describe following aspect of rotor spinning

(i) Yarn withdrawal and winding unit

(ii) Withdrawal tube

(iii) Cleaning of rotor

c) Describe the principle of compact spinning. List down different methods. State various properties of compact spur yarn.

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