17462

15116

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) List down various combing preparatory sequences used in cotton textile industry.

b) State objectives of sliver lap machine.

c) A sliver lap machine is fed with 18 slivers each of 50 grains/yard. If the total draft in the machine is 1.8, what is the weight/yard of lap delivered?

d) What is the function of top comb?

e) What is the function of detaching rollers?

f) State functions of speed frame.

g) Describe how twist is imported in roving on speed frame.

h) State the functions of building mechanism on speed frame.

Marks

i) State the functions of presser arm.

j) State function of differential motion on speed frame.

k) State the functions of ring frame.

l) What is traveller lagging?

m) What is winding coils and binding coils? State its significance.

n) State functions of building mechanism on ring frame.

o) State the function of traveller clearer.

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

a) Give brief account for pre comb draft employed in various combing preparatory sequences. What is its influence on combing?

b) Why there should be even number of passages between card and comber?

c) Draw schematic diagram of passage of cotton through super lap former and label the parts.

d) Describe the step gauge setting and its importance.

e) Calculate the production per shift of sliver lap machine when its lap roller of 12″ diameter runs at 50 r.p.m. to produce a lap of 400 grains/yard with 80% efficiency. If the length of lap on each spool is 120 yards, find both:

(i) The weight of material on each spool and

(ii) Time to complete one spool.

f) Compare bobbin leading principle of winding with flyer leading principle in speed frame.

Marks

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

a) Describe combing cycle on comber with the help of a neat diagram.

b) Describe in detail different top comb settings used on comber and its effect on % of noil extracted with help of schematic diagrams.

c) A high speed comber is fed with 8 laps of 13 kg each. The comber works at 180 nips/min and has laps of 800 grain/yard. The feed per nip is 0.2″ and the noil % extracted is 12%. If the working efficiency is 85%, find

(i) Production per shift of 8 hours.

(ii) Time for lasting of one lap

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

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

b) Describe in details various modern developments on speed frame.

c) (i) Calculate the production (per spindle per 8 hr) of speed frame from following data:

1) Spindle speed = 720 rpm

2) Hank of roving produced = 1.5

3) T.M. = 1.4

4) Efficiency = 85%

ii) A roving frame produces a package of 450 gms. The back roller speed is 30 rpm and 1″ diameter. The draft employed is 6.0. If the machine runs at 85% efficiency, find the time for one full doff, if machine delivers a roving of 3.0 hank.

Marks

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

a) Describe with neat sketch building mechanism of speed frame.

b) Explain various modern developments in ring frame.

c) Describe the working of building mechanism on ring frame with the help of a neat diagram.

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

a) What is importance of on-line monitoring system? Also write about ring data system in ring frame.

b) Draw diagrams of different types of rings and travellers and discuss their comparative merits and demerits.

c) Give a brief account for traveller numbering system.

d) Describe different types of builds with the help of diagrams.

e) A ring frame having 360 spindles runs at 10,000 rpm and produces 50^s yarn with T.M. of 4. What is the production per shift of 8 hours at 86% efficiency?

f) A 6.25 hank roving bobbin weighting 14 ozs is fed to a ring frame which has 1″ front roller running at 126 rpm. The draft employed is 12.0. Find how long the roving bobbin will last.