Started on	Tuesday, 16 November 2021, 2:15 PM
State	Finished
Completed on	Tuesday, 16 November 2021, 3:15 PM
Time taken	59 mins 52 secs
Grade	**6.00** out of 40.00 (**15**%)

The Figure (as given below) shows the reversal mechanism of bobbin rail in a roving frame working with bobbin leading system, where different components are numbered.

The correct statement(s) amongst the following options, is/are

Select one or more:

- A.
  The shaft 10 rotates unidirectionally with gradually reducing rpm with every layer and doesn't slide laterally

- B. The shaft 4 rotates in both directions with gradually reducing rpm with every layer

- C.
  The shaft 4 rotates unidirectionally with gradually reducing rpm with every layer

- D.
  The pulley 1 rotates unidirectionally with gradually reducing rpm with every layer and slides laterally

- E.
  The pulley 1 rotates unidirectionally with gradually reducing rpm with every layer and doesn't slide laterally

- F.
  The shaft 10 rotates in both directions with constant rpm and slides laterally

The correct answers are:
The shaft 10 rotates unidirectionally with gradually reducing rpm with every layer and doesn't slide laterally,
The pulley 1 rotates unidirectionally with gradually reducing rpm with every layer and slides laterally, The shaft 4 rotates in both directions with gradually reducing rpm with every layer

A rotor spinning machine is producing 100% cotton yarn from 4.0 ktex sliver. The fineness of cotton used is 0.16 tex; diameter and speed of opening roller are 60 mm and 10000 rpm respectively; friction draft at rotor wall and groove is 1.5; sliver feed speed is 1 m/min; diameter and speed of rotor are 50 mm and 100000 rpm respectively. The amount of pure air draft (i.e. draft in the transport tube) is (rounded off to 02 decimal places) [   ] ✗

The correct answer is: 5.55

With reference to two-row bobbin arrangement in roving frame, the correct statement(s) amongst the following is/are

Select one or more:

- ☐ A.
  Twist flows easily up to the front roller nip for roving of back row than front row

- ☑ B.
  Twist flows easily up to the front roller nip for roving of front row than back row ✔

- ☐ C.

  Flyers in the back row result higher false twist than front row

- ☑ D.

  Flyers in the front row result higher false twist than back row ✔

The correct answers are:

Flyers in the front row result higher false twist than back row,
Twist flows easily up to the front roller nip for roving of front row than back row

The Figure (given below) shows the gearing diagram of a roving frame. If the number of teeth in pinion D increases (keeping all other running conditions same), the correct statement(s) amongst the following is/are;
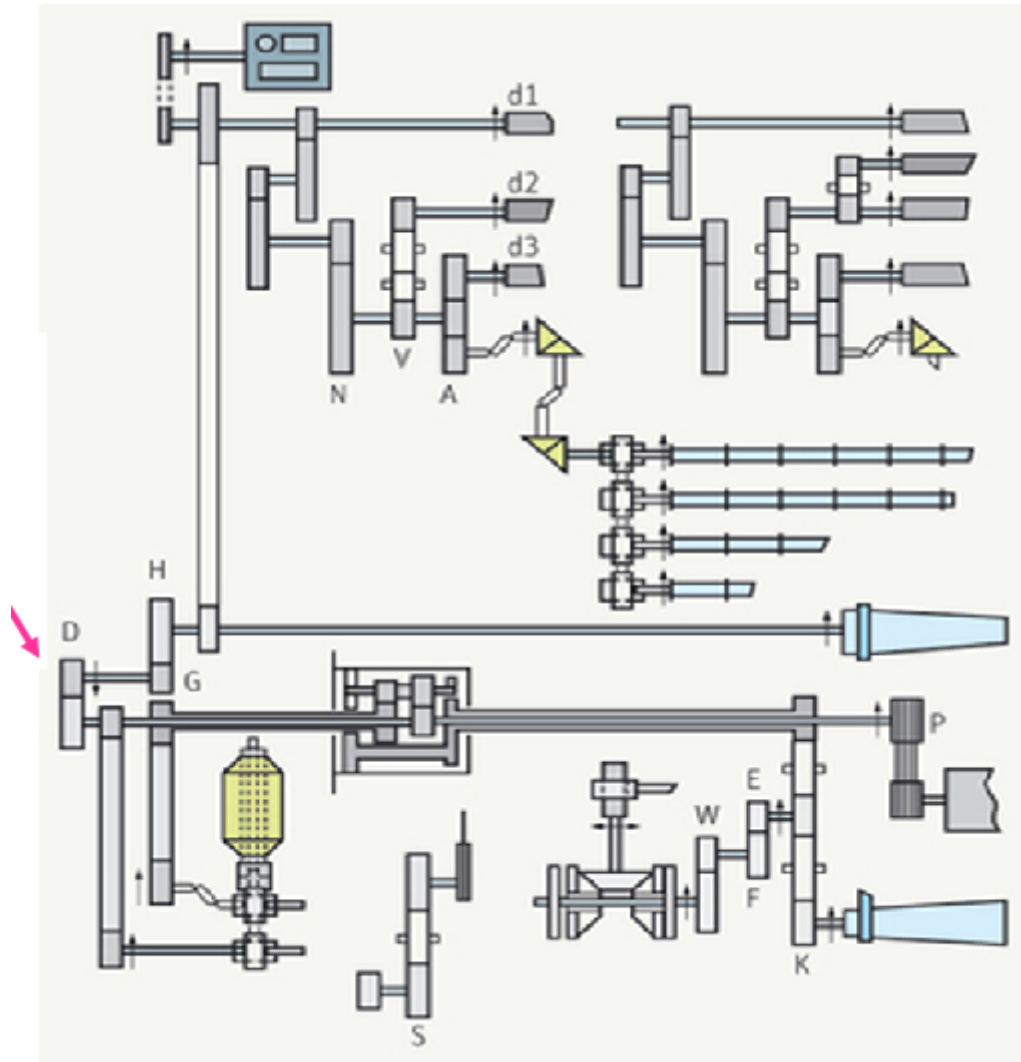
Select one or more:

- [ ] A. Bobbin speed increases
- [x] B. Drafting roller speed decreases ✓
- [ ] C. Spindle speed increases
- [x] D. Spindle speed doesn't change ✓
- [ ] E. Drafting roller speed increases
- [ ] F. Drafting roller speed doesn't change
- [ ] G. Spindle speed decreases
- [ ] H. Twist in roving decreases
- [ ] I. Bobbin speed remains constant
- [ ] J. Twist in roving doesn't change
- [x] K. Twist in roving increases ✓
- [x] L. Bobbin speed decreases ✓

The correct answers are: Twist in roving increases, Bobbin speed decreases, Drafting roller speed decreases, Spindle speed doesn't change

Question 5

Incorrect

Mark 0.00 out of 1.00

With reference to bobbin building in ring frame, the correct statement(s) amongst the following is/are

Select one or more:

- ☑ A.
  Main winding takes place during upward movement of ring rail ✔
- ☐ B.
  Main winding takes place during downward movement of ring rail
- ☐ C. During cross-winding the ring rail moves with decreasing speed
- ☑ D. During cross-winding the ring rail moves with increasing speed ✘

The correct answers are:
Main winding takes place during upward movement of ring rail, During cross-winding the ring rail moves with decreasing speed

Question 6

Not answered

Marked out of 2.00

In a rotor spinning machine the draft distributions are: opening zone draft 2000; the draft in the transport tube is 5; the sliding draft on the rotor wall till the rotor groove is 1.2 and the back doubling within the rotor is 120. The machine/process parameters are: diameters of rotor - 50 mm; speed of rotor - 100,000 rpm; sliver feed speed - 1.50 m/min; Twist contraction- Negligible.

The difference in theoretical yarn twists (twist/meter) in case of *Normal* and *Reverse* withdrawals is (rounded off to 02 decimal places) [   ] ✘

The correct answer is: 12.73

Question 7

Not answered

Marked out of 1.00

With reference to roving process, the correct statement(s) amongst the following is/are

Select one or more:

- [ ] A. Deep groove flyer leg results higher frictional force in roving
- [ ] B. Top mounted flyer is most suitable for auto-doffing of roving
- [ ] C.
  Closed flyer is most suitable for auto-doffing of roving
- [ ] D. Hollow flyer leg results higher frictional force in roving

The correct answers are: Top mounted flyer is most suitable for auto-doffing of roving, Deep groove flyer leg results higher frictional force in roving

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Question 8

Correct

Mark 2.00 out of 2.00

A 30 tex rotor yarn is produced with a rotor diameter of 40 mm and rotor speed of 90000 rpm from 0.15 tex polyester staple fibre. Consider there is no fibre loss or damage during rotor spinning. If the linear density of feed sliver is 3.6 ktex sliver and sliver feed speed is 1 m/min, the number of fibres in the fibre belt cross section at the rotor groove will be (rounded off to 02 decimal places) [2.12] ✓

The correct answer is: 2.12

Question 9

Partially correct

Mark 0.50 out of 1.00

With reference to the bobbin building mechanism in roving frame, the correct statement(s) amongst the following is/are

Select one or more:

- [ ] A. As the roving becomes coarser the number of teeth of the ratchet wheel of belt shifting mechanism should be increased
- [ ] B. The main function of correction rail is to correct the roving count
- [x] C. The main function of correction rail is to adjust the tension level in roving ✓
- [ ] D. As the roving becomes coarser the number of teeth of the ratchet wheel of belt shifting mechanism should be reduced

The correct answers are: The main function of correction rail is to adjust the tension level in roving, As the roving becomes coarser the number of teeth of the ratchet wheel of belt shifting mechanism should be reduced

Question 10

Not answered

Marked out of 2.00

A ring frame with 40 mm ring diameter and spindle speed of 20000 rpm is producing yarn at 25 m/min speed. When the bobbin diameter is 30 mm, the traveller sliding speed (m/sec) is (rounded off to 02 decimal places) [   ] ✗

The correct answer is: 41.33

Question 11

Not answered

Marked out of 2.00

A ring frame with 500 spindles is producing cotton yarn of 20 twist/inch (after cone winding) with 5.0 twist multiplier (TM). If the spindle speed is 15000 rpm and the running efficiency is 90%, the productivity of the machine (kg/hour) is (rounded off to 02 decimal places) [   ] ✗

The correct answer is: 18.98

Question 12

Not answered

Marked out of 2.00

A ring frame, running at 20000 rpm, is producing 36 Ne cotton yarn. If the twist multiplier (TM) of the produced yarn (after cone winding) is 4.0, the traveler speed (rpm) at 40 mm bobbin diameter will be (rounded off to 02 decimal places) [   ] ✗

The correct answer is: 19831.56

Question 13

Not answered

Marked out of 2.00

A roving frame is producing roving of 1.2 Ne count from 0.1 Ne count drawframe sliver. The linear speed of the drafting aprons is 1.1 m/min, the break draft is 1.2 and the spindle speed is 1000 rpm. Neglecting the twist contraction, roller/apron slippage and fly waste, the twist in roving (twist per meter) is (rounded off to 01 decimal place) [   ] ✗

The correct answer is: 90.9

Question 14

Not answered

Marked out of 2.00

A flyer leading roving frame producing roving of 50 twist per meter. At the bobbin diameter of 10 cm, the lead of flyer speed over bobbin speed is 100 rpm. The bobbin speed (rpm), when its diameter reaches 15 cm, is (rounded off to 02 decimal places)

[   ] ✗

The correct answer is: 1504.04

Question 15

Not answered

Marked out of 2.00

The recommended range of angle of lead (angle of yarn pull) in a ring frame during the bobbin build is from 30^0 to 70^0. For a ring frame with ring diameter of 40 mm, the maximum expected difference in yarn twist (twist per meter) from empty bobbin stage to full bobbin stage is approximately (rounded off to 02 decimal places)

[   ] ✗

The correct answer is: 7.45

Question 16

Not answered

Marked out of 1.00

The sequence(s) of operations in mule spinning system (from beginning towards the end of the spinning cycle) amongst the following is/are

Select one or more:

☐ A. Draft-against-twist ➡ Final twisting ➡ Backing-off ➡ Winding-on

☐ B.
Slubbing delivery ➡ Draft-against-twist ➡ Final twisting ➡ Backing-off

☐ C.
Draft-against-twist ➡ Backing-off ➡ Slubbing delivery ➡ Final twisting

☐ D.
Slubbing delivery ➡ Draft-against-twist ➡ Winding-on ➡ Backing-off

The correct answers are:
Slubbing delivery ➡ Draft-against-twist ➡ Final twisting ➡ Backing-off,
Draft-against-twist ➡ Final twisting ➡ Backing-off ➡ Winding-on

Question 17

Not answered

Marked out of 1.00

With reference to drag type roving frame for long and strong fibres, the correct statement(s) amongst the following is/are

Select one or more:

- [ ] A.
  To increase the roving tension the size of felt drag washer is reduced

- [ ] B.
  As the bobbin diameter increases the bobbin rotational speed (rpm) increases

- [ ] C. As the bobbin diameter increases the bobbin rotational speed (rpm) decreases

- [ ] D.
  To increase the roving tension the size of felt drag washer is increased

The correct answers are:
As the bobbin diameter increases the bobbin rotational speed (rpm) increases,
To increase the roving tension the size of felt drag washer is increased

Question 18

Not answered

Marked out of 1.00

With reference to spinning tension in ring spinning, the correct statement(s) amongst the following is/are

Select one or more:

- [ ] A.
  Spinning tension is directly proportional to the ring diameter

- [ ] B. Spinning tension is directly proportional to the bobbin diameter

- [ ] C.
  Spinning tension is inversely proportional to the bobbin diameter

- [ ] D.
  Spinning tension is inversely proportional to the ring diameter

The correct answers are:
Spinning tension is directly proportional to the ring diameter,
Spinning tension is inversely proportional to the bobbin diameter

A ring frame is running at 96% efficiency and producing 30 Ne cotton yarn at 20 m/min delivery rate. The difference in the yarn twist at the ring bobbin (twist per meter), when the bobbin diameter is increased from 25 mm to 40 mm, is (rounded off to 02 decimal places) [   ] ✗

The correct answer is: 4.77

A bobbin leading roving frame is running at spindle speed of 1000 rpm and with delivery speed 20 m/min. The diameters of roving and the flyer top hole are 3 mm and 1.8 cm respectively. Assuming the percent slippage of roving during rolling for imparting false twist at the flyer-top be 80 %, the total twist (*real twist* + *false twist*) (twist/m) in roving in the unsupported zone *(zone between flyer top and the front roller nip)* will be [   ] ✗

The correct answer is: 110

With reference to roving process of manmade fibre and cotton, the correct statement(s) amongst the following is/are

Select one or more:

- ☐ A. 100 % polyester needs matt chrome finish instead of high polish chrome plating finish in flyer
- ☐ B. Spindle speed for manmade fibre is higher than cotton
- ☐ C. Winding tension at roving of cotton is lower than that used in synthetic fibres
- ☐ D. Angle of taper of the bobbins for 100% manmade fibre should be less than that of 100 % cotton

The correct answers are: 100 % polyester needs matt chrome finish instead of high polish chrome plating finish in flyer, Angle of taper of the bobbins for 100% manmade fibre should be less than that of 100 % cotton

With reference to the spindle drive in modern ring frame, the correct statement(s) amongst the following is/are

Select one or more:

☐ A. Tangential belt drive reduces maintenance cost

☐ B. Tangential belt drive increases maintenance cost

☐ C.
Double tangential belt drive ensures uniform spindle speed

☐ D. Single tangential belt drive ensures uniform spindle speed

The correct answers are:
Double tangential belt drive ensures uniform spindle speed, Tangential belt drive reduces maintenance cost

A flyer leading roving frame, running at 1000 rpm spindle speed, is producing a roving with 100 twist per meter. The diameters of empty and full bobbin are 50 mm and 150 mm respectively. The increase bobbin speeds (rpm) from the beginning to the end of the package formation will be approximately (rounded off to 02 decimal places)

[   ] ✗

The correct answer is: 42.44

Question 24

Not answered

Marked out of 1.00

With reference to the drafting zone in modern ring frame, the correct statement(s) amongst the following is/are

Select one or more:

- ☐ A.
  For coarser yarn harder and for finer yarn softer rubber covering of front top roller is preferred

- ☐ B.
  For coarser yarn softer and for finer yarn harder rubber covering of front top roller is preferred

- ☐ C. At entrance softer and at exit harder rubber covering of top roller is preferred

- ☐ D. At entrance harder and at exit softer rubber covering of top roller is preferred

The correct answers are: At entrance harder and at exit softer rubber covering of top roller is preferred,
For coarser yarn harder and for finer yarn softer rubber covering of front top roller is preferred

Question 25

Not answered

Marked out of 1.00

With reference to drafting zone in modern ring frame, the correct statement(s) amongst the following is/are

Select one or more:

- ☐ A. Back top roller is shifted forward to improve the control over floating fibres

- ☐ B.
  Back top roller is shifted backward to provide additional guidance to fibres

- ☐ C. Front top roller is projected slightly forward to reduce the front zone setting

- ☐ D. Front top roller is projected slightly forward to shorten the spinning triangle

The correct answers are: Front top roller is projected slightly forward to shorten the spinning triangle,
Back top roller is shifted backward to provide additional guidance to fibres

The correct statement(s), with reference to traveller in a ring frame, amongst the following is/are

Select one or more:

☐   A.

For coarser yarn a traveller with higher number is used

☐   B.
For finer yarn a traveller with higher number is used

☐   C.
The balloon size increases with increase in traveller number

☑   D.
The balloon size increases with decrease in traveller number ✓

The correct answers are:
The balloon size increases with decrease in traveller number,

For coarser yarn a traveller with higher number is used

Jump to... ⌄