Minor Test TXL222: Yarn Manufacture-II

Total Marks: 40 **Date: 09/11/2020** **Duration: 1hr 15 min (8:00-9:15 AM)**

Write your Name and Entry Number and put your Signature on every page of Answer sheet.

Q. No. 1-16: One or more than one correct option(s)*; 1 mark for marking all the correct choice(s) and correct justifications; 0 marks for partially correct choice(s) or without justification or any incorrect choice(s) or wrong justification*
Q. No. 17-22: *04 Marks each correct answer with solution. No negative or partial marks*

16×1 = 16

1. The correct sequence(s) of operation(s) in a rectilinear cotton comber (from beginning towards the end of the combing cycle) is/are,

A - Nippers forward ➡ Rotary combing ➡ Piecing ➡ Detaching
B - Rotary combing ➡ Web Return ➡ Detaching ➡ Combing by top comb
C - Feeding ➡ Piecing ➡ Web Return ➡ Returns of nipper assembly
D - Nippers forward ➡ Piecing ➡ Combing by top comb ➡ Returns of nipper assembly

2. In case of forward feed system, the comber noil increases with,
   A - Increase in detachment setting;
   B - Increase in needle density in cylinder comb;
   C - Increase in feed length;
   D- Increase in penetration of top comb;

The correct statement(s) is/are,
(A); (B); (C); (D)

3. It is important to have _____(P)_____ number of processes between card and comber in cotton combing system and _____(Q)_____ number of processes between card and comber in wool combing system. The correct combination, amongst the following, when P and Q respectively denote

   A. Odd and Even
   B. Even and Odd
   C. Odd and Odd
   D. Even and Even

4. Relatively better quality of combed sliver is achieved in _____(P)_____ feed comber and higher productivity is achieved in ____(Q)_____ feed comber. The correct combination, amongst the following, when P and Q respectively denote

   A. Backward and Forward
   B. Forward and Backward
   C. Backward and Backward
   D. Forward and Forward

5. For a rectelinear cotton comber, working with backward feed, the correct pair(s) of statements during forward movement of nippers is/are,

   A. Nippers close down and feed roller rotates
   B. Nippers close down and feed roller does not rotate
   C. Nippers open up and feed roller rotates
   D. Nippers open up and feed roller does not rotate

6. For a rectelinear cotton comber, working with forward feed, the correct pair(s) of statements during forward or backward movement of nippers is/are,

   A. Nippers close down and feed roller rotates
   B. Nippers close down and feed roller does not rotate
   C. Nippers open up and feed roller rotates
   D. Nippers open up and feed roller does not rotate

7. "It is important to have even number of processes between card and comber in cotton combing system" – The correct reason(s) amongst the following is/are

   A. Majority of hooks during feeding in comber should be trailing
   B. Majority of hooks during feeding in comber should be leading
   C. To reduce the fibre breakage
   D. To reduce the loss of long fibre

8. "It is important to have odd number of processes between card and comber in wool combing system" – The correct reason(s) amongst the following is/are

   A. Majority of hooks during feeding in comber should be trailing
   B. Majority of hooks during feeding in comber should be leading
   C. To reduce the fibre breakage
   D. To reduce the loss of long fibre

9. With reference to comber lap formation process in cotton combing, the correct statement(s) amongst the following is/are
    A. Comber lap with very high evenness is required to reduce the fibre breakage
    B. Comber lap with very high evenness is required to reduce the long fibre loss
    C. Comber lap with very high fibre parallelization is required to reduce the fibre breakage
    D. Comber lap with very high fibre parallelization is required to reduce the long fibre loss

10. With reference to wool combing, the correct statement(s) amongst the following is/are
    A. Longer feed length for more burry wool
    B. Shorter feed length for more burry wool
    C. A shovel plate moves forward between the open nippers to assist cylinder combing
    D. A shovel plate moves forward between the open nippers to assist final combing by top comb

11. With reference to quality of comber lap in cotton combing, the correct statement(s) amongst the following is/are
    A. With the increase in fibre parallelization in comber lap, the yarn cleanliness improves
    B. With the increase in fibre parallelization in comber lap, the yarn cleanliness deteriorates
    C. For longer fibre length, the comber lap mass per unit length should be lower
    D. With the increase in thickness of comber lap, the overall yarn quality improves

12. The main task(s) of roving frame, amongst the following, is/are,

    A. Attenuation of fibre strand
    B. Removal of short fibres
    C. Imparting twist in the fibre strand
    D. Individualization of fibres

13. In bobbin leading roving frame, the correct statement(s) amongst the following is/are
    A. Bobbin speed increases consistently
    B. Bobbin speed decreases consistently
    C. Bobbin speed remains constant
    D. Flyer speed remains constant

14. Following is/are the basic component(s) in any epicyclic gear,

    A. Sun gear
    B. Arm
    C. Planet gear
    D. Leg

15. The approximate feed length (mm) of a cotton comber, with feed roller of diameter of 30 mm and 20 teeth of ratchet attached with feed roller shaft is,

    A. 3.6
    B. 4.7
    C. 5.5
    D. 5.9

16. The feed per nip of a cotton comber is 6.9 mm with 16 teeth in the ratchet wheel of the feed roller. The approximate feed length (mm) with 20 teeth ratchet wheel is approximately,

    A. 3.6
    B. 4.7
    C. 5.5
    D. 5.9

6× 4 = 24

17. In a rectilinear cotton comber, processing cotton with 39.5 mm longest fibre length and the detachment setting of 15 mm. If the feed roller diameter is 30 mm and the number of teeth in the feed roller ratchet is 22, the approximate noil% of the comber with forward feed will be approximately_____ %.

18. In a sliver lap machine, 24 slivers of 0.10 Ne are combined and a draft of 2.2 is given. In ribbon lap machine, 6 of these laps are combined after giving a draft of 3.6 to each of these laps. The linear density of the resultant lap is approximately _____ g/m.

19. An 8 head comber is running at 400 nips/min. The lap fed is 70 ktex and noil level is 18 %. If the feed/nip is 5 mm, the production at 90% machine efficiency will be approximately _____ kg/h.

20. An eight head comber running with 20% noil extraction. The feed/nip is 10 mm with feed hank 60 g/m. If the production rate is 29 kg/hr with 80% running efficiency, the speed of the comber is approximately _____nips/min.

21. In a bobbing leading roving frame the empty and full bobbin diameters are 48 mm and 120 mm respectively and the initial and final bobbin speeds are 1399 rpm and 1150 rpm respectively. The twist in imparted in roving (twist per meter) is approximately _____.

22. In a bobbin leading speed frame, at 10 cm bobbin diameter the bobbin speed is 100 rpm more than flyer speed. The twist in the roving is 60 turns per meter. When the bobbin diameter reaches 14 cm, the bobbin speed (rpm) will be approximately _____