TTL 221 YARN MANUFACTURE I

Major-2008

Duration: 2hrs

Max. Points: 40

PART A [8 X 3 = 24]

1. What are numerical and weight biased fibre length diagrams? What is the difference in the shape of these diagrams?

2. How does the "waste extracted and good fibre loss" change with a) grid bar settings namely the grid bar angle and the grid gap and b) the beater speed. Give reasons.

3. What is Blending Delay Time (BDT)? In the following sequence, which factors can affect the BDT and explain: "Feed Trunk / Chute – feed roller/feed plate – beater with saw toothed elements – knife edge grid bars – condenser"?

4. What is the influence of "front top plate setting with cylinder" on the amount of flat strips removed in a carding machine? Provide the reasons.

5. What are the three theories put forward to explain the formation of leading hooks in the carded sliver?

6. Why does the "stick-slip" occurs during the roller drafting of staple fibres? For the same fibre type, which will have "stick-slip" occurring at higher draft levels – sliver or roving? Give reasons.

7. For a 3 over 3 drafting system, with 1.25 break draft and 6 total draft show how the sliver irregularity changes with the loading on the middle top roller. Provide reason for this behaviour.

8. What is "can effect"? What is the remedial action needed to solve this problem?

PART B [2 x 8 =16]

1. Mention four types of sensors that are used for auto leveling in carding machine.[2] Derive an expression for the Operational layer on cylinder in the region "Licker-in to Flats" at the backside of the card.[6]

2. How does doubling, drafting, count and fibre configuration of input sliver affect the irregularity of the drafted slivers?[4] Mention names of different types of graphical representations of mass irregularity of fibrous strands and show how these tools are useful in identifying the source of faults in the fibrous strands [4].