

Answer The Following Questions :

Q.1. In Friction Spinning :

(4 Marks)

i) Discuss with illustration :

operation principle ; Kind of friction systems "in terms of feed / opening assembly / separation of collecting and twisting functions / number of friction surfaces" ; imparting twist and withdrawal and winding up.

(12 Marks)

ii) Compare between

a- Dref II and Dref III process considering the following: m/c construction; Delivery speed; Material used; Count range and type of yarns ; Field of use and yarn quality.

b- Dref spinning system and other spinning systems "woollen and open-end spinning

c- The Master Spinner "of Platt Sacolowel" and Dref Spinning

Q.2. The principle of false twist is now exploited to enable yarn to be spun in the follow processes: Rotofil of Dupont, Fasciated spinning and Murata jet spinning :

i) Discuss the false twist principle and spinning elements (2 Marks)

ii) Explain with illustrations the following :

(6 Marks)

a) The principle of MJS yarn formation

b) The distribution of twist in the running fiber strand.

c) Raw material requirements and type of products

d) How yarn quality of MJS is different from that of Ring spun yarn.

iii) Compare between the following systems: MJS system, Rotor spinning and Ring spinning system in terms of:

a) spinning limits ; production speed and elimination of process

b) floor space and total costs

c) waste reduction ; yarn and fabric quality. (7 Marks)

Q.3. Wrap Spinning process is afforded by many Manufacturers "Lessona, Makre, GMD and parafil of suessen Company".

1) Explain with illustration the principle of wrap yarn formation and structure comparing with conventional spinning

(2 Marks)

ii) Compare between Lessona's Cover spun System and parafil System of Suessen (PL1000 and PL2000) in terms of: (5 Marks)

- a) operating principles
- b) yarn structure and Type of yarns
- c) Feature of process "Raw material usable; fiber parameters, Feed stock types; production speeds, Count range and Field of use"

iii) Compare between wrap yarn properties with other conventional yarn (Worsted spinning) in terms of: Spinning Limits, Breaking strength and elongation; yarn irregularity (4 Marks)

iv) Discuss with illustration:

- a) The quality characteristics of PL yarn
- b) Mode of operation in plyfil spinning Method
- c) Economics of plyfil process
- d) The advantages of plyfil yarns.

(5 Marks)

Q.4. In Compact Spinning Systems,

i) Explain with a diagrammatic sketch, the principle of Conventional Ring Spinning and Compact Spinning system. (2 Marks)

ii) Compare between the various spinning systems for the production of Compact yarns. (5 Marks)

iii) Discuss the following:

a) The characteristics of yarn manufactured by means of Compact spinning systems comparing with Ring spun yarns.

b) The advantages of spinning by means of the Compact system.

c) The advantages were achieved in downstream processing "weaving and knitting processes". (5 Marks)

Q.5. In Adhesive processes "Bobtex spinning and Twistless spinning systems", Explain with illustration: (2 Marks)

(i) The principle of yarn formation

(ii) Arrangement of process details in Bobtex System "Bi, Tri Component" and Twistless systems "TEK-Ja, T.N.O and Twilo process". (3 Marks)

(iii) The influence of spinning parameters on yarn quality "Tensile properties, stiffness and abrasion resistance". (3 Marks)

(iv) Advantages and disadvantages of the systems. (3 Marks)