

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 160612

Roll No.

B.TECH.

Theory Examination (Semester-VI) 2015-16

YARN MANUFACTURE-IV

Time : 3 Hours

Max. Marks : 100

Part-A

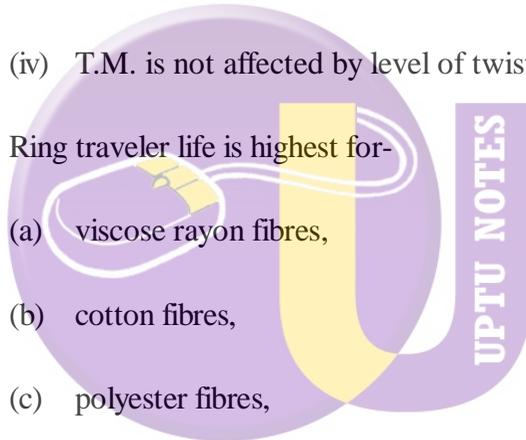
Q1. Attempt all parts. Each part carries two marks.

(2×10=20)

- (a) What is the function of wharve in ring spinning?
- (b) The draft range of modern ring frame is -
 - (a) 5-10,
 - (b) 10-15,
 - (c) 15-60,
 - (d) 100-300.

- (c) To produce a soft and flexible yarn, one needs :-
- (a) fine fibres & high twist,
 - (b) Coarse fibre and high twist,
 - (c) Fine fibres and low twist,
 - (d) Coarse fibres and low twist.
- (d) Placing a condenser in the drafting zone lead to-
- (i) Nep generation,
 - (ii) Fly generation,
 - (iii) Yarn hairiness,
 - (iv) Yarn evenness.
- (e) The maximum practical limit of spindle speed in a conventional cotton ring frame is around:
- (i) 5000 rpm,
 - (ii) 10000 rpm,
 - (iii) 25000 rpm,
 - (iv) 50000 rpm

- (f) Twist multiplier is a better indicator of twist characteristics of yarn than T.P.I, because-
- (i) T.M. is directly proportional to the tangent of twist angle,
 - (ii) T.M. describe the level of twist in yarn irrespective of linear density,
 - (iii) TM is related to both the above characters,
 - (iv) T.M. is not affected by level of twist.
- (g) Ring traveler life is highest for-
- (a) viscose rayon fibres,
 - (b) cotton fibres,
 - (c) polyester fibres,
 - (d) acrylic fibres.
- (h) The hardness of ring surface is in the range of-
- (i) 300-400 vickers,
 - (ii) 400-550 vickers,



(iii) 600-750,

(iv) 750-850.

(i) Answer with reason whether balloon control rings are effective throughout the doff or not.

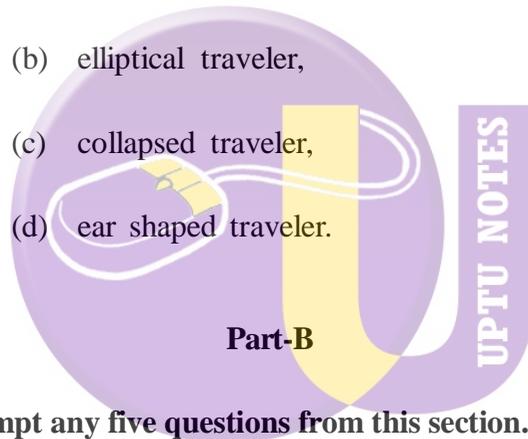
(j) Anti-wedge ring requires-

(a) oval shape traveler,

(b) elliptical traveler,

(c) collapsed traveler,

(d) ear shaped traveler.



Q2. Attempt any five questions from this section. Each question carries ten marks. (10×5=50)

(a) Discuss the builder motion of ring spinning frame.

(b) Describe the concept of spinning geometry showing suitable sketch.

(c) Discuss the demands placed on ring spinning on the machine. Also write a note on materials for ring.

- (d) Discuss the various types of spinning waste & system of waste collection in ring frame.
- (e) Discuss the objects of doubling. Also discuss different methods of threading systems employed in doubling machine.
- (f) Discuss the principle and operation of Two for One twister (TFO).
- (g) Discuss the significance of fancy yarns. Also discuss the methods of fancy yarn manufacturing.
- (h) Discuss the construction and working of reeling machine.

Part-C

Attempt any two questions from this section. (15×2=30)

- Q3. Discuss the need to automate ring spinning and possibilities for automation.
- Q4. Discuss the principle & operation of compact yarn formation. Also discuss the structure of compact yarn and its uses.

- Q5. (a) A ring frame produces 40's yarn. The hank of roving fed is 1.5. The twist multiplier used is 4.25, twist wheel-42T and C.P. is 47. Find the twist constant and draft constant.
- (b) Find the resultant when 2/40s worsted & 60's Ne cotton are folded together. Also find the proportion by weight in 100 kgs of the resultant yarn.

