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M. Tech (Textile Engineering-Part Time) (Semester – 3rd)

POST SPINNING OPERATIONS

Subject Code: MTEXD1-212

Paper ID: [22201113]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consists of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consists of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(4 marks each)

- Q1. How did the drawing induce structural changes in a spun filament?
- Q2. Explain the spin draw process for high-performance nylon-6 cord manufacturing.
- Q3. Discuss the effect of tension on the heat setting of thermoplastic filaments.
- Q4. Discuss the effect of heat setting on the morphology of fiber.

Section – B

(8 marks each)

- Q5. Explain the method of producing high-shrink acrylic fibre. Discuss how the bulk of the material is achieved through air jet texturing.
- Q6. Discuss the effect of temperature and strain rate on neck drawing on filament properties.
- Q7. Discuss the importance of post-spinning operation on multifilament sewing threads and how it is performed.
- Q8. Discuss the effect of different raw material parameters on false twist textured yarn quality.

Section – C

(10 marks each)

- Q9. Explain all kinds of drawing behavior shown by thermoplastic materials. Also, discuss which type of drawing shows a more stable elastic network and why.
- Q10. Differentiate between the structure and properties of 4 major textured yarns. Also, state the major application of each of the textured yarn.
- Q11. Discuss the mechanism of temporary and permanent settings. Define the degree of setting, and discuss its importance and an assessment.