

B.E/B.TECH DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2018)

Seventh Semester

TEXTILE TECHNOLOGY

U18TXE0001: Manufactured Fiber Technology

COURSE OUTCOMES

CO1: Discuss the fundamental concepts of polymerization techniques.

CO2: Explain the manufacturing process of various regenerated fibres.

CO3: Explain the manufacturing process of various synthetic fibres.

CO4: Summarize various post spinning operations preferred in manmade fibres.

CO5: Outline the characterization techniques of manmade fibres.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|-------------------|
| 1. Define thermal transitions of a polymer | CO1 | [K ₂] |
| 2. Outline the functions of extruder in melt spinning process | CO1 | [K ₂] |
| 3. List the properties of viscose rayon | CO2 | [K ₂] |
| 4. State the uses of bicomponent fibres | CO2 | [K ₁] |
| 5. List any four properties of polyester | CO3 | [K ₁] |
| 6. Define elastomeric fibres | CO3 | [K ₂] |
| 7. List the objectives of drawing process | CO4 | [K ₁] |
| 8. Define texturization | CO4 | [K ₂] |
| 9. Define number average molecular weight | CO5 | [K ₂] |
| 10. Outline the importance of thermal characterization of textile fibres | CO5 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|--|-----|-------------------|
| 11. Describe briefly the various components of melt spinning with a neat sketch. | CO1 | [K ₂] |
| 12. Discuss the step by step process involved in manufacturing of viscose | CO2 | [K ₂] |

rayon.

- | | | | | | |
|-----|----|--|---|-----|-------------------|
| 13. | a) | Explain the manufacturing process of polyester | 8 | CO3 | [K ₂] |
| | b) | Discuss the polymerization and filament yarn manufacturing process of Nylon 6 | 8 | | |
| 14. | a) | Compare the structural changes of filament yarn due to texturization process | 8 | CO4 | [K ₄] |
| | b) | Explain in detail the working principle of airjet texturizing process | 8 | CO4 | [K ₂] |
| 15. | | Explain the characterization of polymers based on molecular weight and thermal analysis. | | CO5 | [K ₅] |
| 16. | | Discuss the drawing and heat setting operations, stating the significance of each process. | | CO4 | [K ₂] |
