



B.TECH DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Fifth Semester

TEXTILE TECHNOLOGY

U18TXE0001: Manufactured Fibre 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. State the importance of molecular orientation in synthetic fibres. | CO1 | [K ₁] |
| 2. Identify the zones in single screw extruder along the length of screw starting from hopper. | CO1 | [K ₂] |
| 3. Outline the physical and chemical processes involved in viscose spinning bath. | CO2 | [K ₂] |
| 4. Briefly write about development of viscose based super absorbent fibre. | CO2 | [K ₁] |
| 5. List the co-monomers used in acrylic fibre manufacture. | CO3 | [K ₁] |
| 6. Mention the monomers used to develop Nylon6 and Nylo66 fibres. | CO3 | [K ₁] |
| 7. Outline the significance of heat setting of synthetic fibres. | CO4 | [K ₂] |
| 8. List various texturising methods. | CO4 | [K ₁] |
| 9. How is number average molecular weight defined? | CO5 | [K ₂] |
| 10. Outline the uses of thermo analytical techniques. | 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. | a) | Explain glass transition temperature in synthetic fibres with suitable illustrations. | 8 | CO1 | [K ₂] |
| | b) | Describe the general features of melt spinning line with a schematic diagram. | 8 | CO1 | [K ₂] |
| 12. | a) | Write about manufacture of viscose rayon fibre with flow diagram. | 8 | CO2 | [K ₁] |
| | b) | Give a detailed note on viscose fibre variants. | 8 | CO2 | [K ₁] |
| 13. | a) | Explain sequence of polyester manufacture by purified terephthalic acid route with a flow diagram. | 8 | CO3 | [K ₂] |
| | b) | Describe spin-draw texturing process of polypropylene fibre production. | 8 | CO3 | [K ₁] |
| 14. | a) | Explain spin finish application using spray technique. | 8 | CO4 | [K ₁] |
| | b) | Write about influence of drawing on structure and properties of synthetic fibres. | 8 | CO4 | [K ₃] |
| 15. | a) | Explain end group analysis of polymers elaborately. | 8 | CO5 | [K ₂] |
| | b) | Describe Differential Thermal Analysis with an illustration. | 8 | CO5 | [K ₁] |
| 16. | a) | Give a note on problems encountered in spin finish application. | 8 | CO4 | [K ₂] |
| | b) | Explain tow processing of acrylic with a schematic diagram. | 8 | CO3 | [K ₁] |
