



B.TECH DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Third Semester

TEXTILE TECHNOLOGY

U18TXI3202: Yarn Manufacturing Technology I

COURSE OUTCOMES

CO1: Discuss the concepts and mechanism of opening and cleaning of blowroom machines.

CO2: Explain the principle and mechanism of fibre individualization in carding.

CO3: Describe the concept of fibre parallelization in draw frame.

CO4: Discuss the concept and mechanism in comber process.

CO5: Explain the principle and working of speed frame.

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. Suggest suitable ginning machine to process long staple cotton fibre. Give reason for your selection. | CO1 | [K ₃] |
| 2. List the type of wastes removed using contamination sorter machines. | CO1 | [K ₁] |
| 3. State any four salient features of modern card. | CO2 | [K ₁] |
| 4. State the objectives of carding machine. | CO2 | [K ₁] |
| 5. Give shore hardness range for front and back roller of draw frame. | CO3 | [K ₁] |
| 6. How draft is continuously altered in draw frame? | CO3 | [K ₄] |
| 7. Suggest the feed direction to get higher noil in comber. | CO4 | [K ₃] |
| 8. Give reasons for feeding the combing lab with majority of leading hooks. | CO4 | [K ₄] |
| 9. State the functions of false twister attached with flyer in speed frame. | CO5 | [K ₂] |
| 10. Why bobbin lead mechanism is used in speed frame? | CO5 | [K ₄] |

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

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|-----|----|---|---|-----|-------------------|
| 11. | a) | Draw and explain a ginning machine suitable for coarse cotton fibres. | 8 | CO1 | [K ₃] |
| | b) | Explain suitable beater used in blowroom line for coarse and fine cleaning. | 8 | CO1 | [K ₄] |
| 12. | a) | Draw and explain passage of material through modern card. | 8 | CO2 | [K ₂] |
| | b) | Compare conventional and modern carding machines in any four aspects. | 8 | CO2 | [K ₄] |
| 13. | a) | Explain open loop auto leveller used in draw frames. | 8 | CO3 | [K ₂] |
| | b) | Calculate production in kg per day (24 hours) using the data: Feed hank = 0.12 Ne, Number of doubling = 8, draft = 7.2, number of machines = 4, number of delivery per machine = 2, efficiency = 90%, delivery speed = 650 MPM. | 8 | CO3 | [K ₃] |
| 14. | a) | Show and explain cycle of combing operations in combing machine. | 8 | CO4 | [K ₂] |
| | b) | Calculate production in kg per day (24 hours) using the data: comber speed = 400 Nips /min, Noil = 15%, Number of heads = 8, Feed length = 8mm, Number of comber machines = 6, Lap hank = 0.016 Ne, Efficiency = 84%. | 8 | CO4 | [K ₃] |
| 15. | a) | Compare bobbin lead and flyer lead mechanism in speed frame. | 8 | CO5 | [K ₄] |
| | b) | Summarize modern developments in speed frame compared with conventional machines. | 8 | CO5 | [K ₃] |
| 16. | a) | Calculate production in kg per day (24 hours) using the data: Flyer speed = 1100 rpm, Sliver hank = 0.14 Ne, Draft = 9, T.M= 1.2, Efficiency = 88%, Number of spindles / machines =120, Number of machines = 6. | 8 | CO5 | [K ₃] |
| | b) | Summarize modern developments in blowroom line to improve opening and cleaning of cotton fibres. | 8 | CO1 | [K ₃] |
