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Total No. of Printed Pages: [1]

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M. Tech Textile (Part Time) (Semester – 4th)
STRUCTURAL MECHANICS OF FABRICS
Subject Code: MTEXS1-203
Paper ID: [22201115]

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 consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(4 marks each)

- Q1. What is the Fabric Cover Factor, and how does it influence textile engineering?
- Q2. What are the key features of Sateen weaves in Cloth Geometry?
- Q3. What are K-Values, and how do they relate to the geometry of knitted fabrics?
- Q4. How is the Racetrack Section of Yarn analyzed in Cloth Geometry?

Section – B

(8 marks each)

- Q5. How do Twill weaves differ in Cloth Geometry from Plain weaves
- Q6. How does the Elastic Thread Model contribute to fabric analysis?
- Q7. How do the geometry and properties of weft knitted fabrics differ from other types of knitted fabrics?

Section – C

(10 marks each)

- Q8. Explain the significance of the Jammed Structure concept in understanding textile materials and their behavior during fabrication processes.
- Q9. Discuss the relationship between the geometry of knitted fabrics and their physical and mechanical properties, considering parameters such as stitch density, loop size, yarn composition, and fabric structure.
- Q10. Discuss the relationship between fabric structure and its tensile and tearing behavior, considering factors such as yarn type, weave pattern, and fabric finishing.