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B. Tech Textile Engg. (Semester – 8th)

TECHNICAL TEXTILES

Subject Code: BTEXD1811

Paper ID: [18112645]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 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

(2 marks each)

Q1. Attempt the following:

- a. What is the role of nonwoven fabrics in technical textiles?
- b. List the functional requirements of tarpaulin fabric.
- c. Mention four applications for stretch fabrics.
- d. Why polypropylene fibre is preferred for use in fishing nets.
- e. What are the components of car seating composite?
- f. Arrange the following fibres in the ascending order of their LOI%: Polyester, PBI, Teflon, Modacrylic
- g. What is pine cone effect?
- h. What are the important properties that a wound dressing should possess?
- i. Give functional requirements specific to the sports activity.
- j. What do you understand by Waterproof Breathable fabrics?

Section – B

(5 marks each)

- Q2. Define Technical Textiles. Classify technical textiles on the basis of their characteristics, functional requirements and end use applications.
- Q3. Illustrate different mechanism of filtration by media filter for different applications.
- Q4. Apply your understanding of heat and flame resistance for the construction of fire retardant clothing.
- Q5. Explain the various factors that affect wettability of textiles for various active sportswear.
- Q6. What do you understand by California Bearing Ratio? Explain the method of testing CBR

Section – C

(10 marks each)

- Q7. (a) Illustrate the process of combustion of textile material. Analyze the effect of difference in heat loss and heat production for different fibres, with reference to designing of protective textiles. (5)
(b) Discuss major tyre designs. Explain the manufacturing process of tyres and the role of tyre cords in the tyres. (5)
- Q8. (a) Illustrate the principle involved in the Reinforcement of soil using the geotextiles. (5)
(b) Discuss the application of woven, knitted and braided structures in the textile reinforced composites. (5)
- Q9. (a) Categorize medical textiles into various types. Suggest different fibres and manufacturing processes suitable for different products of medical textiles. (5)
(b) Write a short note on the 'Airbags' used in the passenger cars. (5)