R3557

Sub. Code
2MF3C1

M.Voc. DEGREE EXAMINATION, NOVEMBER – 2025

Third Semester

Fashion Technology

TECHNICAL TEXTILES

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct answer.

1. Which of the following is a primary classification of technical textiles? (CO1, K1)

   (a) Hometech (b) Silktech

   (c) Wooltech (d) Polystech

2. What is the primary function of technical textiles in industrial applications? (CO1, K1)

   (a) Decoration (b) Protection and functionality

   (c) Aesthetic value (d) None of the above

3. High-performance inorganic fibres include. (CO2, K1)

   (a) Cotton (b) Polyester

   (c) Glass fibres (d) Silk

4. Which fabric structure is commonly used in geotextiles? (CO2, K1)

   (a) Knitted fabrics (b) Nonwoven fabrics

   (c) Satin fabrics (d) Terry fabrics

5. What is the primary property required for agrotextiles? (CO-3, K1)

(a) Durability

(b) UV resistance

(c) High chemical reactivity

(d) None of the above

6. Geotextiles are primarily used for (CO3, K1)

(a) Enhancing clothing durability

(b) Soil stabilization and erosion control

(c) Making medical dressings

(d) Decorative purposes

7. Antimicrobial textiles are used to (CO4, K1)

(a) Provide insulation

(b) Resist bacterial growth

(c) Enhance elasticity

(d) None of the above

8. What is the classification of a wound dressing in medical textiles? (CO4, K1)

(a) Hygiene textiles (b) Implantable textiles

(c) Nonwoven textiles (d) Antibacterial textiles

9. What is a major characteristic of thermal insulation materials? (CO5, K1)

(a) High permeability to water vapours

(b) Low thermal conductivity

(c) High UV absorption

(d) Increased thermal conductivity

10. Camouflage textiles are designed for (CO5, K1)

(a) Water resistance

(b) Military combat clothing

(c) UV protection

(d) Pesticide resistance

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) Define technical textiles and explain their significance in the modern textile industry. (CO1, K2)

Or

(b) Discuss the milestones in the development of technical textiles. (CO1, K3)

12. (a) Differentiate between high-strength organic and inorganic fibres with examples. (CO2, K3)

Or

(b) Explain the applications of nonwoven fabrics in technical textiles. (CO2, K2)

13. (a) Describe the essential properties required for agrotextiles. (CO3, K2)

Or

(b) Discuss the raw materials and applications of geotextiles in construction. (CO3, K3)

14. (a) Analyze the functions of geotextiles. (CO4, K4)

Or

(b) Explain the role of hygiene textiles in healthcare applications. (CO4, K2)

15. (a) List and explain the various types of thermal insulation materials. (CO5, K2)

Or

(b) Describe the characteristics of protective textiles used against pesticides. (CO5, K2)

Part C (5 × 8 = 40)

Answer **all** questions not more than 1000 words each.

16. (a) Classify technical textiles based on their applications with examples. (CO1, K3)

Or

(b) Demonstrate the future growth potential of the technical textile industry. (CO1, K3)

17. (a) Compare the properties of high-modulus organic fibres and ultra-fine novelty fibres. (CO2, K4)

Or

(b) Evaluate the role of different fabric structures in the functionality of technical textiles. (CO2, K5)

18. (a) Design a geotextile-based solution for erosion control in hilly terrains. (CO3, K6)

Or

(b) Assess the raw material and technology used in Industrial textile and mobile tech. (CO3, K5)

19. (a) Develop an innovative medical textile product for wound healing. (CO4, K6)

Or

(b) Analyze the differences between vascular grafts and cardiac supportive devices. (CO4, K4)

20. (a) Illustrate the importance of water-vapor-permeable textiles in protective clothing. (CO5, K4)

Or

(b) Propose a new protective textile solution for high-temperature industrial environments. (CO5, K6)

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R3558

Sub. Code
2MF3C2

M.Voc. DEGREE EXAMINATION, NOVEMBER – 2025

Third Semester

Fashion Technology

TEXTILE TESTING

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective questions by choosing the correct answer.

1. What is the standard atmospheric condition for textile testing? (CO1, K1)
   (a) 20°C and 50% RH
   (b) 25°C and 60% RH
   (c) 27°C and 65% RH
   (d) 21°C and 70% RH

2. Which of the following factors primarily affects the moisture regain of a fiber during testing? (CO1, K1)
   (a) Fiber length and tensile strength
   (b) Relative humidity and temperature
   (c) Fabric weave and GSM
   (d) Fiber crimp and color

3. Which instrument measures fiber length? (CO2, K1)
   (a) Baer Sorter (b) Micronaire
   (c) Stelometer (d) Uster Classimat

4. Which instrument is used to determine the trash content in cotton? (CO2, K1)

(a) Uster Tester (b) Shirley Analyzer

(c) Stelometer (d) Micronaire Tester

5. Which system is NOT used for yarn count measurement? (CO3, K1)

(a) Tex (b) Denier

(c) GSM (d) English count

6. Which test evaluates dimensional stability in garments? (CO3, K1)

(a) Pilling Test

(b) Spirality Test

(c) Seam Strength Test

(d) Air Permeability Test

7. Which tester is used to measure fabric tensile strength? (CO4, K1)

(a) Martindale Tester

(b) Hydraulic Bursting Strength Tester

(c) Tearing Strength Tester

(d) CRE Tester

8. The Martindale Tester is primarily used for (CO4, K1)

(a) Measuring tearing strength

(b) Testing abrasion resistance

(c) Evaluating water repellency

(d) Measuring thermal conductivity

9. Seam strength is evaluated using (CO5, K1)

(a) Kawabata Tester

(b) Peel Tester

(c) Tearing Strength Tester

(d) Zipper Tester

10. The FAST Tester is used to evaluate (CO5, K1)

(a) Seam spirality (b) Thermal properties

(c) Fabric handle (d) Contact angle

Part B ($5 \times 5 = 25$)

Answer **all** the questions not more than 500 words each.

11. (a) Explain the significance of standard atmospheric conditions in textile testing. (CO1, K2)

Or

(b) Describe a conditioning oven. (CO1, K2)

12. (a) Explain the salient features of High volume instruments. (CO2, K2)

Or

(b) Describe a Sheffield micronaire instrument. (CO2, K2)

13. (a) What are the methods used to determine yarn count? Explain any one method. (CO3, K2)

Or

(b) Discuss the principle of the Uster Classimat for measuring yarn defects. (CO3, K3)

14. (a) Explain the importance of measuring crease recovery in fabrics. (CO4, K2)

Or

(b) Describe the method to measure drape using a Drape Meter. (CO4, K3)

15. (a) Describe the procedure for testing seam strength in garments. (CO5, K2)

Or

(b) What is MMT test? Explain. (CO5, K2)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) Elaborate on methods of sampling of fibre, yarn and fabric. (CO1, K3)

Or

(b) Discuss about instruments used for measuring moisture content and region. (CO1, K3)

17. (a) Demonstrate the process of testing fiber maturity using the caustic soda method. (CO2, K3)

Or

(b) Assess the principle and working of the Shirley Trash Analyzer. (CO2, K5)

18. (a) Compare the principles of the CRT, CRE, and CRL tensile strength testers. (CO3, K4)

Or

(b) Elaborate on yarn crimp, yarn numbering and yarn twist. (CO3, K5)

19. (a) Propose an innovative fabric testing method for measuring pilling resistance. (CO4, K6)

Or

(b) Analyze the effect of fabric stiffness on garment performance. (CO4, K4)

20. (a) Create a detailed experimental plan for measuring thermal conductivity in technical textiles. (CO5, K6)

Or

(b) Develop a comprehensive testing protocol for evaluating zipper performance. (CO5, K6)

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R3559

Sub. Code
2MF3E2

M.Voc. DEGREE EXAMINATION, NOVEMBER – 2025

Third Semester

Fashion Technology

Elective — LEAN MANUFACTURE IN APPAREL INDUSTRY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective questions by choosing the correct option.

1. What does the '5S' principle in Lean Manufacturing include? (CO1, K1)

   (a) Simplify, Sort, Settle, Standardize, Sustain

   (b) Seiri, Seiton, Seiso, Seiketsu, Shitsuke

   (c) Start, Steer, Stimulate, Stature

   (d) Standardise, Stimulate, seiri, Seiso

2. Which of the following is not one of the 8 types of waste in Lean? (CO1, K1)

   (a) Overproduction

   (b) Inventory

   (c) Marketing

   (d) Waiting

3. What does SIPOC stand for? (CO2, K1)

(a) Supplier, Input, Process, Output, Customer

(b) Simplify, Improve, Produce, Operate, Control

(c) Sort, Inventory, Process, Optimize, Customer

(d) Standardize, Innovate, Plan, Output, Customer

4. What is the primary focus of Value Stream Mapping? (CO2, K1)

(a) Enhancing marketing strategies

(b) Identifying non-value activities

(c) Reducing employee turnover

(d) Designing non value activities

5. Which statistical model is central to the DMAIC methodology? (CO3, K1)

(a) Regression Analysis

(b) Normal Distribution

(c) Kaizen

(d) Pareto Chart

6. In Lean Six Sigma, the "Control' phase focuses on: (CO3, K1)

(a) Reducing waste

(b) Implementing solutions

(c) Sustaining improvements

(d) Analyzing data

7. What is Takt Time? (CO4, K1)

(a) The time required for one production batch

(b) The time for producing exactly what is required

(c) The average cycle time per product

(d) The time spent on waste reduction activities

8. Which of the following is a key feature of the Kanban system? (CO4, K1)

(a) Reduction of human resources

(b) Real-time tracking of inventory

(c) Standardized garment sizes

(d) Increase in lead time

9. What does the term 'Poka-Yoke' refer to? (CO5, K1)

(a) A visual management system

(b) A mistake-proofing technique

(c) A garment sorting tool

(d) A statistical analysis software

10. What is the main goal of SMED (Single Minute Exchange of Dies)? (CO5, K1)

(a) Increase inventory levels

(b) Simplify production designs

(c) Reduce changeover time

(d) Standardize garment quality

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) Explain the concept of the eight wastes in Lean Manufacturing. (CO1, K2)

Or

(b) Describe the significance of the 55 methodology in improving workplace efficiency. (CO1, K2)

12. (a) Discuss the importance of Critical to Quality (CTQ) in Lean Manufacturing. (CO2, K3)

Or

(b) Illustrate how SIPOC aids in process mapping and improvement. (CO2, K2)

13. (a) Define the DMAIC model and its role in quality control. (CO3, K2)

Or

(b) Explain the use of normal distribution in defect measurement and analysis. (CO3, K2)

14. (a) What are the benefits of using Kanban cards for inventory management? (CO4, K2)

Or

(b) Explain the role of Kaizen in achieving continuous improvement in the garment industry. (CO4, K2)

15. (a) Describe the concept of Heijunka and its relevance to Lean production systems. (CO5, K2)

Or

(b) Discuss the application of Total Productive Maintenance(TPM) in improving equipment efficiency. (CO5, K3)

Part C (5 × 8 = 40)

Answer **all** the questions not more than 1000 words each.

16. (a) Compare the traditional manufacturing approach with Lean Manufacturing principles. (CO1, K4)

Or

(b) Illustrate the profit leakages caused by wastages in garment production. (CO1, K4)

17. (a) Apply the concept of Value Stream Mapping to identify non-value-added activities in a production process. (CO2, K3)

Or

(b) Develop a strategy for implementing JIT (Just-In-Time) in garment manufacturing. (CO2, K3)

18. (a) Analyze the relationship between DMAIC methodology and the Zero Defect Program. (CO3, K4)

Or

(b) Examine the effectiveness of Lean Six Sigma in reducing defects in apparel production. (CO3, K4)

19. (a) Evaluate the impact of Lean inventory control methods on cost savings and operational efficiency. (CO4, K5)

Or

(b) Critically assess the role of Economic Order Quantity (EOQ) in reducing inventory levels. (CO4, K5)

20. (a) Propose a Lean implementation strategy for a garment manufacturing unit using Heijunka and SMED. (CO5, K6)

Or

(b) Design a visual control system (Andon) for monitoring and improving garment production quality. (CO5, K6)

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