निम्नलिखित का वर्णन कीजिए :

(अ) कार्य-समय व्यवस्था

(ब) सामग्री हैंडलिंग

(स) बुनियादी सिलाई पैटर्न

(द) आसन तकनीक ।

9. Describe the following : 4×4=16

(a) Anthropometric

(b) Angular Pattern

(c) Scientific approach in sewing techniques

(d) Concept of Ergonomics.

निम्नलिखित का वर्णन कीजिए :

(अ) एंथ्रोपोमेट्रिक

(ब) कोणीय पैटर्न

(स) सिलाई तकनीकों में वैज्ञानिक दृष्टिकोण

(द) एर्गोनॉमिक्स की अवधारणा ।

5032

M. Tech. (FT) EXAMINATION, May 2023

(Second Semester)

ADVANCES IN APPAREL TECHNOLOGY

MT-FTL-201

Time : 3 *Hours*   *Maximum Marks* : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

प्रत्येक इकाई से **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या 1 अनिवार्य है । सभी प्रश्नों के अंक समान हैं ।

1. Describe the following : 4×4=16

(a) Motion Economy

(b) Types of Overclock Machine

(c) Convex and Concave Pattern

(d) Shift Work

निम्नलिखित का वर्णन कीजिए :

(अ) मोशन इकोनॉमी

(ब) ओवरक्लॉक मशीन के प्रकार

(स) उत्तल और अवतल पैटर्न

(द) शिफ्ट कार्य

Unit I
इकाई I

2. What is Stitch ? Explain its classes in details.   16

सिलाई क्या है ? इसकी क्लासों को विस्तार से समझाइए ।

3. What do you mean by Cutting Technology ? Explain available "Fabric cutting technologies" in details.   16

कटिंग टेक्नोलॉजी से आप क्या समझते हैं ? उपलब्ध "फैब्रिक कटिंग टेक्नोलॉजीज" को विस्तार से समझाइए ।

Unit II
इकाई II

4. Explain various Bed types of machines and their applications in manufacturing process.   16

विभिन्न बेड प्रकार की मशीनों और निर्माण प्रक्रिया में उनके अनुप्रयोगों की व्याख्या कीजिए ।

5. Describe the following :   4×4=16

(a) Flat-bed Machine

(b) Large Area Raised Bed Machine

(c) DNLS Machine

(d) Multithread chain stitch machine

निम्नलिखित का वर्णन कीजिए :

(अ) फ्लैट-बेड मशीन

(ब) लार्ज एरिया राइज्ड बेड मशीन

(स) डी.एन.एल.एस. मशीन

(द) मल्टीथ्रेड चेन सिलाई मशीन

Unit III
इकाई III

6. Explain various types of feed mechanism, their suitability for different fabrics and construction of component and their contribution towards Quality and Productivity.   16

विभिन्न प्रकार के फ़ीड तंत्र, विभिन्न कपड़ों के लिए उनकी उपयुक्तता और घटक के निर्माण और गुणवत्ता और उत्पादकता में उनके योगदान की व्याख्या कीजिए ।

7. Explain Developments and Automation in Garment Manufacturing Industries.   16

परिधान निर्माण उद्योग में विकास और स्वचालन की व्याख्या कीजिए ।

Unit IV
इकाई IV

8. Describe the following :   4×4=16

(a) Working-time Arrangement

(b) Material Handling

(c) Basic Sewing Patterns

(d) Postural Techniques

M. Tech. (FT) EXAMINATION, May 2023

(Second Semester)

FIBRE TO FABRICS

MT-FTL-202

Time : 3 Hours   *Maximum Marks : 80*

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. (i) State whether the following statements are true or false :   **1×8=8**

    (a) Main component of silk filament is sericin.

    (b) Viscose is having higher alkali resistance.

    (c) Manufacturing of polyester is carried out by wet spinning method.

    (d) Moisture regain of polyester is lesser than Regain of acrylic fibre.

    (e) Ring yarns are cheaper than rotor yarns.

    (f) Carding is considered heart of spinning operation.

    (g) Let off and take up are primary motions for weaving.

(h)   Weft knitting machineries requires less space than warp knitting industry.

(ii)   Attempt following short answer questions : **4×2=8**

(a)   What do you mean by secondary motions in weaving ?

(b)   What is polymerizaion ?

(c)   What are the objectives of draw frame ?

(d)   What are high performance fibers ?

Unit I

2. (a)   Discuss physical and chemical properties of Wool and Silk.   **10**

    (b)   Briefly state the general principle of manufacturing of manmade fibres.   **6**

3. Explain manufacturing of viscose fibres along with physical and chemical properties.   **16**

Unit II

4. Discuss brief overview of polyester manufacturing along with their physical and chemical properties.   **16**

5. Explain manufacturing process for Nylon 6 and Nylon 6, 6 along with their physical and chemical properties. **16**

Unit III

6. (a)   Briefly discuss manufacturing process for rotor yarns.   **8**

    (b)   What are textured yarns and their uses ? Discuss their types.   **8**

7. What are basic requirements and selection criteria of sewing threads ? Discuss types of sewing threads, fibres used and finishes applied.   **16**

Unit IV

8. Explain web forming and bonding methods for non-woven.   **16**

9. Compare wovens, knitted and non-woven fabrics in terms of manufacturing, properties and applications.   **16**

Section-B

4. Define Protective clothing and type of protective clothing. Explain the requirement of protective clothing.   **16**

5. Write short notes on the following :   **8×8=16**

   (a)   Ballistic Protective Clothing

   (b)   Thermal Protective Clothing

Section-C

6. Explain in detail multifunctional textiles with incorported electronics for integrated communication, music, health monitoring, defence support functions.   **16**

7. Discuss the phase change materials, their types and process of incorporation into fibers and fabric.   **16**

Section-D

8. Explain in detail about environmentally sensitive textile and their application methods, uses of chromic material in textiles.   **16**

9. Discuss about the introduction and definition of Nanotechnology. Also explain the applications of Nanotechnology in the field of Textiles and Apparels.   **16**

M. Tech. (FT) EXAMINATION, May 2023

(Second Semester)

FUNCTIONAL TEXTILES AND GARMENTS

MT-FTL-204

Time : 3 Hours   *Maximum Marks : 80*

Note : Attempt *Five* questions, selecting *one* question each from section A, B, C, D. Q. No. **1** is compulsory. All questions carry equal marks.

1. This question has *four* parts and each part is compulsory. Write short notes on the following :   **4×4=16**

   (a)   Chemical protective clothing

   (b)   Sterilization in medical field

   (c)   Electronic clothing

   (d)   High performance fiber

Section-A

2. Discuss about the functional garment and their types in detail.   **16**

3. What is sports textile and their requirement ? Explain types of fibers used in sports textile and manufacturing approaches of sports textile.   **16**

5035

M. Tech. (FT) EXAMINATION, May 2023

(Second Semester)

APPAREL TESTING AND QUALITY
CHARACTERISATION

MT-FTL-205

Time : 3 Hours   *Maximum Marks : 80*

Note :   Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1.   Attempt following short answer questions. Each question carries 2 marks :   **8×2=16**

   (a)   What is random sample ?

   (b)   Define air permeability and its unit.

   (c)   What is FAST in garment testing ?

   (d)   What do you understand by primary hand values ?

   (e)   What are various agents to reduce colour fastness in fabric ?

   (f)   Define limited oxygen index.

   (g)   What are ASTM Standards ?

   (h)   What do you understand by testing protocols for apparels ?

Unit I

2. (a) Prepare a tabular chart for testing performed on fibres, yarn and fabric properties along with list of instruments used. **13**

(b) What is contact angle and how does it influence wettability in fabric ? **3**

3. How fabric comfort properties are assessed ? Discuss their evaluation procedures in brief. **16**

Unit II

4. What are primary and secondary hand values in fabrics ? What was the need of KES and FAST ? Discuss their importance to apparel industry. **16**

5. Discuss Kawabata Evaluation System, its different modules and various parameters measured through it. **16**

Unit III

6. Explain the evaluation procedures to measure colour fastness of fabrics to light, washing and rubbing. **16**

7. Differentiate water repellency and water proofness in fabrics and discuss their measurement methods. **16**

Unit IV

8. (a) Discuss various safety aspects considered for children apparels. **8**

(b) Discuss the role of vendors and laboratory in apparel sector. **8**

9. (a) Discuss the importance and role of ASTM and AATCC in apparel industry. **8**

(b) Discuss the role of retailers and agent in apparel industry. **8**

3. Explain *three* natural disasters in detail with their causes and preventive measures. **16**

4. What do you mean by Cyclones ? Explain its causes and impacts. **16**

5. Define the term Tsunami. Discuss its causes, impacts and also brief the area prone to tsunami in India. **16**

6. Explain the applications of remote sensing in Disaster Management. Explain the areas prone to Floods and Droughts in India. **16**

7. Explain pro-disaster diseases in detail with their effects. **16**

8. What do you mean by Preparedness ? Explain techniques of risk assessment and strategies for survival. **16**

9. What do you mean by Disaster Mitigation ? Give an overview of disaster mitigation and mitigation programme in India. **16**

M. Tech. (FT) EXAMINATION, May 2023

(Second Semester)

DISASTER MANAGEMENT

MT-AU-201

Time : 3 Hours   *Maximum Marks :* 80

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. All questions carry equal marks.

1. Short answer type questions :   **8×2=16**
   (a) What is Disaster Management ?
   (b) How does Earthquake occur ?
   (c) Identify *two* forms of landslides
   (d) What is Mitigation ?
   (e) What is an earthquake ? What is its intensity ?
   (f) Name *two* natural disasters.
   (g) Name *two* human activities that cause a flood in India.
   (h) Explain preparedness.

2. What is Disaster Management ? Explain man-made disasters in detail. What is the difference between Hazard and Disaster ? **16**