

22583

22232

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
  - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) Define “Non-Woven”.
- (b) State various types of bonding techniques used for the production of Non-woven.
- (c) List any two characteristics of Non-woven fabric.
- (d) Define “Geo-Textiles”.
- (e) State any four essential properties of Medical Textiles.
- (f) Give any four applications of Non-Woven textiles.
- (g) List the functional properties of Geo textiles.



- 2. Attempt any THREE of the following : 12**
- (a) Describe with a neat sketch the web forming process for staple fibres in the production of non-woven fabrics.
  - (b) Describe any two application of non-woven fabrics with its characteristics and properties.
  - (c) Describe with a neat sketch the concept and process flow chart for any one method of manufacturing of non-woven fabric.
  - (d) Define “Technical Textiles” and give its detailed classification with two examples of each.
- 3. Attempt any THREE of the following : 12**
- (a) Describe with a neat sketch the mechanism of needle punching of non-woven fabrics.
  - (b) Choose the relevant physical & chemical properties of Coir fibre to be used for geo-drain applications.
  - (c) Give the classification of Non-woven with two examples of each class.
  - (d) Describe with a neat sketch any two thermal bonding methods of non-woven fabric production.
- 4. Attempt any THREE of the following : 12**
- (a) Describe with a neat sketch the applications of Geo-textiles in the form of Geo-grids, Geo-nets and Geo-composites.
  - (b) State the characteristics and properties of polyester and Nylon fibres to be used for technical textiles.
  - (c) Identify the properties and their production method for the production of following agro textiles :
    - (i) Sun Screen
    - (ii) Bird nets

- (d) Give the classification of medical textiles with two examples of each.
- (e) State various applications of agro textiles in crop production. Describe briefly how the agro textile are produced.

**5. Attempt any TWO of the following :**

**12**

- (a) Suggest relevant bonding method and its mechanism for obtaining the following non-woven fabrics :
  - (i) Home-furnishing
  - (ii) Automotive textiles
- (b) Describe with a neat sketch the filtration function of Geo-textiles.
- (c) Describe with neat sketch the production process and properties of fibres used for ground cover and shade nets.

**6. Attempt any TWO of the following :**

**12**

- (a) Select suitable characteristics with their properties for the application in the following Geotextile fields :
    - (i) Separation
    - (ii) Drainage
  - (b) Suggest relevant fibres and fabrics with their properties for the application in Horticulture and Floriculture.
  - (c) Select relevant fibre and fabric characteristics for application in following medical textiles :
    - (i) Implantable materials
    - (ii) Hygiene products
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