

17569

15116

3 Hours / 100 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 :**

**20**

- (a) List down the limitations of shuttle looms.
- (b) Give classification of shuttleless looms.
- (c) State the advantages of projectile weaving.
- (d) Give classification of rapier looms.
- (e) List down types of selvages used on shuttleless looms. State the need for these selvages. Draw diagrams of any two.
- (f) Give classification of non-wovens.
- (g) Give classification of geo-textiles.
- (h) List down various applications of non-wovens.

**2. Attempt any TWO :**

**16**

- (a) Describe salient features and advantages of projectile weaving machine.
- (b) Describe the construction and working of picking mechanism on projectile weaving machine with the help of a neat diagram.
- (c) Describe the cycle of operation of weft insertion on Dewas system for flexible rapier loom with the help of a neat diagram.

**P.T.O.**

**3. Attempt any TWO : 16**

- (a) Give details of air stream control on air-jet loom. Describe the importance of relay nozzles and profile reed. Draw diagram of relay injection system.
- (b) State the details of air quality requirements on air-jet loom.
- (c) State salient features of water-jet weaving machine. Describe construction and working of picking mechanism. What is 'lead angle' ?

**4. Attempt any TWO : 16**

- (a) What is the function of weft accumulator ? List down different types of weft accumulator. Explain the working of any one with the help of a diagram.
- (b) Describe the yarn requirements for shuttleless weaving. Explain the precautions to be taken during warping, sizing and drawing-in processes.
- (c) Explain the aerodynamic method of web production and different machineries used for the same.

**5. Attempt any TWO : 16**

- (a) Explain the needling technique and its various configurations. Explain the factors influencing needling and properties of needle punched fabric.
- (b) (i) List down four adhesives used for adhesive bonding. State various types of bonds formed and list down various methods of adhesive bonding.  
(ii) Describe cross-laying of web. State its importance.
- (c) Give merits and demerits of different types of rapiers. Draw diagram for drive to any one of rapier.

**6. Attempt any TWO : 16**

- (a) Give detail uses of Geo-textiles.
  - (b) Elaborate different functions of Geo-textiles.
  - (c) (i) List down various types of Geo-textiles  
(ii) Give method of preparation for web by mechanical means.
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