



# 17569

**15162**

**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) Classify shuttle less looms. Give general features of the same.
- b) State advantages and disadvantages of shuttle looms. Elaborate the need for shuttle less technology.
- c) List down different types of projectiles used on projectile looms. With its dimensions and weight.
- d) Give detailed classification of rapier weaving.
- e) What is the function of confusers, profile reed and relay nozzles on air jet loom.
- f) Give brief account for the different types of selvages used on shuttle less loom with help of a diagram.
- g) Give detailed classification of non-wovens.
- h) Give classification of geo-textiles along with their functions.

**2. Attempt any two :**

**16**

- a) Explain the working of torsion rod picking mechanism with the help of a neat diagram.
- b) Describe the cycle of operation of weft insertion on flexible rapier loom.
- c) Explain air quality requirement, air compressor and distribution system of air jet loom.

**P.T.O.**

**3. Attempt any two :**

- a) Describe construction and working of picking mechanism on water jet loom with neat sketch.
- b) List down various precautions to be taken while preparing warp to be used for shuttle less weaving. (Winding, warping sizing and drawing in departments)
- c) List down various methods of web preparation. Explain aerodynamic method of web preparation.

**4. Attempt any two :**

- a) Describe mechanical bonding (needling technique) with the help of a neat diagram. List down various configurations used in this technique. Draw diagram of needle and label the parts.
- b) i) List down various web laying methods. Explain any one with the help of a neat diagram.  
ii) Give brief account for adhesive bonding with respect to following points :
  - 1) Adhesives used
  - 2) Types of bonds formed
  - 3) Various methods of bonding.
- c) State different applications of all types non-woven fabric you are aware of.

**5. Attempt any two :**

- a) List down various types of geo-textiles, with an application of each of them.
- b) Explain the use of geo-textiles in Railway tracks.
- c) Explain the use of geo-textiles in reverbed and canals.

**6. Attempt any four :**

- a) Describe picking cycle on projectile loom.
  - b) Explain weft insertion on Bi-phase rapier weaving machine.
  - c) Draw schematic diagram of air jet main nozzle and label the parts.
  - d) What is the function of weft accumulator ? List down different types of weft accumulators. Explain any one of them with the help of a neat diagram.
  - e) i) What is the advantage of impulsive beat up ?  
ii) State the functions of relay nozzles on air jet loom.
  - f) Elaborate yam requirements for shuttle less weaving.
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