

**SIXTH SEMESTER  
TEXTILE TECHNOLOGY  
SCHEME JULY 2008  
SHUTTLELESS WEAVING**

**Time : Three Hours**

**Maximum Marks : 100**

**Note :** (i) Attempt total *six* questions. Question No.1 (Objective Types) is compulsory. From the remaining questions attempt any *five*.

(ii) Give sketch wherever necessary.

1. Choose the correct answer. 2 each
- i) The approximate amount of water used per pick in Water Jet weaving machine is:
- (a) 0.5C.C                      (b) 2.5C.C  
(c) 3.5C.C                      (d) 4.5C.C
- ii) In Sulzer projectile weaving machine the full beat up is done at:
- (a) 295° of the loom cycle.  
(b) 105° of the loom cycle.  
(c) 255° of the loom cycle.  
(d) 52.5° of the loom cycle.

(2)

- iii) Free flying and restricted flying of yarn are the terms related with:
    - (a) Rapier weaving
    - (b) Jet weaving
    - (c) Sulzer projectile weaving
    - (d) Multiphase weaving
  - iv) Idea of projectile weaving was taken by Sulzer brothers from the original concept of:
    - (a) Rudolf Rossman
    - (b) J.C Brooks
    - (c) Johann Gabler
    - (d) Vladimir Svaty
  - v) Weft insertion rate of Sulzer Ruti M8300 Air Jet Warp way Multiphase weaving machine is:
    - (a) 2500
    - (b) 3500
    - (c) 4000
    - (d) More than 5000
2. a) What are the essential requirements of air Jet Weft insertion? Describe the design and passage of warp in Maxbo Air Jet Weaving machine. 12

(3)

- b) Explain with sketch the function of confuser and profile reed in Air Jet weaving. 6
3. a) What are the technical requirements of a Selvedge? With neat sketches describe the function of different types of unconventional Selvedges used for shuttle less weaving. 12
- b) Explain how the Buckling problem can be avoided in Air Jet Weaving. 6
4. Explain the 'Torsion Bar picking mechanism of Sulzer projectile weaving with the help of a neat sketch. 18
5. a) Explain with sketches the working principle and the Weft insertion system of 'Saurer500' two phase weaving machine. 10
- b) Explain the principle of 'Dewas' and Gabler system of Weft insertion in Rapier weaving machine. 8
6. a) Discuss in detail the comparison between Conventional loom with modern unconventional shuttle less weaving machines with their advantages and disadvantages. 12
- b) Write short notes on Weft Accumulator. 6

(4)

7. a) What are the different types of multiphase weaving machine? State the main features of different types of Multiphase weaving with their advantages and disadvantages. 10
- b) Explain with sketches the four stages of weft insertion of Water Jet weaving. 8
8. Write short notes on any three of the following : 6 each
- a) Classification of Rapier weaving
- b) Compare Air Jet weaving with Water Jet weaving in terms of utility.
- c) Different stages of developments of shuttle less weaving
- d) Staubli positive Dobby
- e) Telescopic Rapier weaving

