



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B.Tech(APM)/SEM-4/APM-403/2011**

**2011**

**BASICS OF TEXTILE MANUFACTURE-II**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) A loom is a machine having at least
  - a) 3 motions
  - b) 4 motions
  - c) 5 motions
  - d) 7 motions.
- ii) For continuous weaving of the fabric, weaving machine requires
  - a) shedding & picking
  - b) beat-up
  - c) take-up
  - d) take-up & let-off.
- iii) Complicated designs like portraits, landscape, etc. can be woven with the shedding of
  - a) Tappet
  - b) Dobby
  - c) Jacquard
  - d) None of these.



- iv) Weft bar is due to difference in
- a) Material
  - b) Colour
  - c) Count
  - d) Pick spacing.
- v) Water-jet loom is having average picking speed of
- a) 44 ft/sec
  - b) 80 ft/sec
  - c) 100 ft/sec
  - d) 160 ft/sec.
- vi) Which needle is termed as "self-acting" needle ?
- a) Bearded needle
  - b) Latch needle
  - c) Compound needle
  - d) None of these.
- vii) On multi-track circular weft knitting machines, the number of tracks are generally
- a) two
  - b) three
  - c) four
  - d) six.
- viii) The extensibility of which weft knitted fabric is maximum ?
- a) Single jersey
  - b) Rib
  - c) Interlock
  - d) Fleece.
- ix) Stitch density is
- a) no. of wales in unit length
  - b) no. of courses in unit length
  - c) no. of loops in unit area
  - d) none of these.
- x) Guide bars are used on
- a) circular weft knitting machines
  - b) flat weft knitting machines
  - c) warp knitting machines
  - d) none of these.



**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. What are the objects of warping and sizing ?
3. What are the motions of a loom without any of which, weaving is not possible ? Explain.
4. What limitations do non-woven fabrics have ? What are the differences between woven and non-woven fabrics ?
5. Show with diagram, the different parts of a latch needle and mention their functions.
6. Compare weft knitting and warp knitting.
7. Discuss any two faults of woven fabric, their causes and remedies.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

8. a) Discuss briefly how the woven fabric is formed. 5  
b) Show the passage of material on a loom with a schematic diagram. 5  
c) Why are heald frames not required in jacquard weaving ? 5
9. a) What are the disadvantages of conventional looms ? 4  
b) What are the objectives of shuttleless looms ? 4  
c) What are the differences between water-jet loom and air-jet loom ? 7



10. a) What are the important properties of non-woven fabrics ? 5
- b) What are the different types of chemical and thermal bonding used in non-woven fabrics ? Discuss the special features of each type. 7
- c) How are needle punched non-wovens differ from chemical bonded non-wovens ? 3
11. a) Why has knitting industry experienced a remarkable growth in the recent years ? 5
- b) Explain with suitable diagram the loop forming cycle of a single jersey weft knitting machine using latch needle. 7
- c) Compare latch and bearded needle. 3
12. a) Explain the term 'needle gaiting'. How is it related to the double jersey weft knitting machines ? 5
- b) What are the different types of warp knitting machines and how do they differ ? 3
- c) What would be the theoretical production in kg of a 30 inch diameter and 90 feeder single jersey weft knitting machine, running at 30 rpm and producing plain jersey fabric of 2.5 mm stitch length using 40s cotton yarn ? 7
13. a) What is dobby and what is jacquard ? What are the differences between the two ? 2 + 2
- b) Discuss the working principle of any one type of dobby. 5
- c) Discuss the working principle of any one type of jacquard. 6
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