KUMARAGURU
college of technology
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Register Number: ……

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Fifth Semester

TEXTILE TECHNOLOGY

TTX109: Shuttleless Weaving

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Limitation of speed in shuttle loom is due to
   a) type of pirns b) type of yarn
   c) type of reed d) weight of shuttle
2. Weft accumulators are used to
   a) alter designs b) control yarn tension
   c) control weight of fabrics d) change yarn count
3. Mass of a projectile will be approximately
   a) 200 gms b) 50gms
   c) 2gms d) 1000gms
4. Torsion bar is used for
   a) picking b) shedding
   c) beat-up d) takeup
5. Weft insertion rate of rapier weaving machine is----------
   a) 1700m/min b) 500m/min
   c) 50m/min d) 10m/min
6. Advantage of flexible rapiers
   a) more space b) less weight
   c) less space d) yarn tension control
7. Airjet weaving is not suited for
   a) spun yarn b) filament yarn
   c) fancy yarn d) milenge yarn

8. Auxillary nozzles are used to

a) strengthen yarn b) split warp

c) stabilize the passage of weft d) reduce crimp

9. Reed mark is a

a) weft way defect b) warp way defect

c) yarn defect d) machine defect

10. Water consumed per pick in water jet loom is

a) 0.5cc b) 10cc

c) 50cc d) 100cc

PART B (10 x 2 = 20 Marks)

11. State the advantages of shulttleless weaving machines.
12. What do you mean by multiphase weaving?
13. How many projectiles are required for 390cm width weaving machine?
14. State the demerits of tuck-in selvedge.
15. What do you mean by bi-phase rapier?
16. Give the formulae for calculating production of rapier weaving machine.
17. Define the principle of weft insertion in airjet looms.
18. What is a profile reed?
19. List the products woven in water jet loom.
20. What do you understand by Techno economics?

PART C (5 x 14 = 70 Marks)

21. a) Discuss in detail the parameters affecting productivity of shuttle looms and highlight the importance of establishing shuttleless looms in India for achieving better quality and productivity.

(OR)

b) Explain the working of circular weaving machines with a neat sketch.

22. a) Draw the various cycles of weft insertion in a gripper projectile machine and explain the sequence of operation.

(OR)

b) (i) Explain the working of Torsion bar picking mechanism with a sketch (8)

(ii) Write the salient features of projectile machine (6)

23. a) Classify various types of Rapier weaving and write the principles of weft insertion.

(OR)

b) Explain the various Rapier drives with relevant sketches.

24. a) (i) A weaving shed has 24 air jet looms of 360cm width weaving high quality shirting fabrics and work 3 shifts of 8 hours per day. The average weft insertion rate is 2100 meters/min and the picks per inch are 60.The efficiency of the weaving machine is 89%.Calculate the production/day for 24 looms. (10)

(ii) Briefly write about the different type of nozzles used in air jet looms. (4)

(OR)

b) Discuss the suitability of air jet weaving for different type of fabrics and highlight the air quality requirements.

25. a) Explain the weft insertion cycle of water jet looms with relevant sketches.

(OR)

b) Discuss various types fabric defects, causes and their remedies in shuttle less looms.

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