KUMARAGURU
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GENERAL INSTRUCTIONS TO THE CANDIDATES

1. Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K_1 to K_6)

2. Candidates are strictly instructed not to write anything in the question paper other than their roll number.

3. Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.

4. Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.

5. Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

B.TECH DEGREE EXAMINATIONS: DEC 2015

(Regulation 2014)

Third Semester

TEXTILE TECHNOLOGY

U14TXT303: Woven Fabric Manufacturing Technology

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

Answer all the Questions:-
PART A (10 x 1 = 10 Marks)

1. The woven fabric preparatory processes have been arranged in ascending order with respect to delivery rate in meters per minute. The correct set is   CO1 [K_2]
   i. Sizing – Pirn winding – Cone winding – Warping
   ii. Warping – Cone winding – Pirn winding – Sizing
   iii. Warping – Pirn winding – Cone winding – Sizing
   iv. Sizing – Pirn winding – Cone winding – Warping

   a) i   b) ii

   c) iii   d) iv

2. Length of yarn in a bunch on a pirn of automatic loom approximately equals   CO1 [K_2]

   a) 5-10 Meter   b) 5-15 Meter

   c) 5-20 Meter   d) 10-20 Meter

3. In a sizing process, if add-on is 12.8% and paste concentration is 16%, the value of wet pick-up (%) would be   CO2 [K_3]

a)	16	b)	50
c)	80	d)	200

4. In a sectional warping system   CO2 [K_3]
   i. A drum of fixed capacity ensures same length of each thread within a section
   ii. For a drum of fixed conicity the number of sections per unit width of warp sheet is independent of volume of each section
   iii. A drum of variable conicity results in varying tension levels in the warp threads
   iv. For a drum of variable conicity the number of sections per unit width of warp sheet goes down with rise in volume of sections

The set of correct statement is

a)	i , ii	b)	i , iii
c)	ii , iii	d)	ii , iv

5. Normal percentage of air space in the reed is   CO3 [K_1]

a)	30 %	b)	60 %
c)	75 %	d)	80 %

6. Determine the correctness of the following Assertion **[A]** & Reason **[R]**   CO3[K_2]

[A] The positive let-off motion maintains the free length of warp and the tension on warp sheet at constant level

[R] The fluctuation of free warp length due to take up causes change in warp tension, which is sensed by the system, and the correction in both warp tension and in free warp length is carried out through the let off system automatically

a)	Both **[A]** & **[R]** are true and **[R]** is the correct reason for **[A]**	b)	Both **[A]** & **[R]** are true and **[R]** is not the correct reason for **[A]**
c)	Both **[A]** & **[R]** are false	d)	**[A]** is true but **[R]** is false

7. Approximate dwell period in a conventional loom is   CO4 [K_2]

a)	30^0	b)	60^0
c)	90^0	d)	120^0

8. During beat-up, the possibility of bumping increases if   CO4 [K_3]

a)	Warp tension is low and cloth fell displacement is low	b)	Warp tension is high and cloth fell displacement is low
c)	Warp tension is low and cloth fell displacement is high	d)	Warp tension is high and cloth fell displacement is high

9. A design repeating on 10 cm along length and 6 cm along width of fabric, having 40 ends and 30 picks per cm will require jacquard capacity of   CO5 [K_4]

a)	180	b)	240
c)	300	d)	400

10. Consider the elements in List I and List II an d choose the correct alternatives from amongst a, b, c, and d   CO1[K$_L$]

List I	List II
A. Warp tension	i. Lingoes
B. Draw string tension	ii. Dagger
C. Warp protection	iii. Temple
D. Fabric width	iv. Back rest

	A	B	C	D
a)	iii	ii	i	iv
b)	iv	iii	i	ii
c)	iii	i	ii	iv
d)	iv	i	ii	iii

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11. Why tensioner and slub catcher is needed for winding?   CO1 [K$_2$]

12. Enlist any two pirn winding defects causes and remedies.   CO1 [K$_3$]

13. List out the types of creels used in warping.   CO2 [K$_1$]

14. In a sizing machine, 110 meter length of warp sheet was processed. The weight of warp was 55 kgs and sized warp weight is 62 kgs. Calculate the size add- on %.   CO2 [K$_3$]

15. What are the requirements of drawing-in and gaiting operation in weaving?   CO3 [K$_2$]

16. What is the necessity of loom timing diagram for various motions?   CO3 [K$_3$]

17. State the functions of swell and check strap in conventional shuttle loom.   CO3 [K$_2$]

18. What do you meant by eccentricity of sley motion in a loom?   CO4 [K$_2$]

19. Differentiate loose reed and fast reed mechanism.   CO4 [K$_3$]

20. State the functions of weft feeler mechanism. And give its types.   CO4 [K$_2$]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. A multi-coloured warp of 20 Tex yarn is to be wound onto a warping beam of 1 meter diameter on which the inclines are fixed at 15^0 to the axis. The warp is 1.42 meter wide and contains 6680 ends. When tensioned correctly its density is 576 kg/ m^3. The maximum depth of yarn on the beam could be 10 cm. Determine the maximum length of warp and the traverse length per section.
CO2 [K$_4$]

22. i. Explain in detail the working principle of any one cone winding machine. (8) CO1 [K$_3$]

   ii. Calculate the production per shift of 8 hours in cone winding machine with the (6)
   following datas.
   Speed of the machine = 600 yards per min., Number of drums =120,
   Count of yarn = 40^s Ne, Efficiency = 85%.

23. Discuss in detail the various weaving motions and also explain loom timing diagram for these motions.
CO3 [K$_3$]

24. Explain in detail the working principles of double lift single cylinder jacquard shedding mechanism.
CO3 [K$_3$]

25. How will you achieve fractional cover factor with the use of seven wheel take-up motion? Explain in detail with a sketch.
CO4 [K$_4$]

26. Explain how you will achieve random multi-colour weft insertion with a pick-at-will loom with relevant sketch.
CO5 [K$_5$]

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