## **GUJARAT TECHNOLOGICAL UNIVERSITY** BE - SEMESTER-VII • EXAMINATION – SUMMER • 2014

Su Su Tii Ins	bject bject me: () tructio 1. 2. 3.	Code: 172905Date: 29-05-2014Name: Fibre Science & Elements of Textile Structure2.30 pm - 05.00 pmTotal Marks: 70ons:Attempt all questions.Make suitable assumptions wherever necessary.Figures to the right indicate full marks.	
Q.1	(a)	Derive the equations for Pierce's geometry of plain woven fabric where "weft yarn is straight and warp yarn is not jammed".	07
	(b)	Derive all equations related to warp and weft cover factor.	07
Q.2	(a) (b)	Discuss the experimental methods used to determine water retention in fibres. Define : i. Ellipticity ii. Fibre modular length. <b>OR</b>	08 06
	<b>(b)</b>	Write short note on : i. Analysis by Correlogram ii. Schwarz constant.	06
Q.3	(a)	Write short notes on : i. Hexagonal Close Packing ii. Disturbing factors.	06
	(b)	With neat figure discuss the zonal distribution curves for roving yarn.	08
Q.3	(a)	Discuss the technique for observation of the paths of individual fibres to study migration behviour.	10
	(b)	Discuss about Fibre Migration.	04
Q.4	(a)	Discuss the Electronic microscopy techniques used for investigating Fibre Structure.	07
	(b)	Write a brief note on moisture absorption in textiles.	07
Q.4	(a)	Discuss the practical effects influenced by rate of moisture absorption.	07
	(b)	Discuss the viscoelastic behavior and its impact in textile materials.	07
Q.5	(a)	Derive the relationship between crimp (C), yarn shrinkage (Sy) and cloth shrinkage (Sc).	08
	(b)	Explain effects of application of tensile force to a fabric for a unidirectional loading.	06
Q.5	(a) (b)	Derive the equations for weight factor by Pierce and Dickson. Define following terms : i. Porosity ii. Permeability iii. Fabric density and specific volume	08 06

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