GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Su Su Tii Ins	bject bject me: 1 tructio 1. 2. 3.	Code: 172905Date: 27-11-2014Name: Fibre Science and Elements of Textile Structure0.30 am - 01.00 pmTotal Marks: 70ons:Attempt all questions.Make suitable assumptions wherever necessary.Figures to the right indicate full marks.	
Q.1	(a) (b)	Write a brief note on Heats of sorption in fibers. Define: porosity and permeability. Derive an equation to calculate Fabric pore area in total porosity of the fabric.	07 07
Q.2	(a) (b)	Derive the equations for Pierce's geometry of plain woven fabric where "weft yarn is straight and warp yarn is jammed". Discuss in detail about fundamental structural features of yarn.	07 07
	(b)	Discuss in detail the significance of twist in yarns.	07
Q.3	(a) (b)	Describe Coil winding method for measuring yarn dimensions. What are the parameters to characterize the migration?	07 07
Q.3	(a) (b)	Discuss in detail the experimental work of Morton and his associates. Write a short note on Differential Migration.	08 06
Q.4	(a) (b)	Discuss how infrared radiations can be used for investigating Fibre Structure. Write a brief note on "Order and Disorder in Fibre Structure"	07 07
Q.4	(a) (b)	Discuss the technical significance of swelling in fibres and also discuss how its measurement is done.	07 07
Q.5	(b) (a) (b)	Derive the relationship between two measures of cover k and d/p. What is difference between crimp and Take-up.? Explain crimp-interchange phenomena.	08 06
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Q.5	(a) (b)	Derive the equations for weight factor by Pierce and Dickson. Which fabric properties are affected by fabric density and specific volume? Explain in detail how fabric density and specific volume can be calculated.	08 06
