Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1722505 **Date: 05-06-2013**

Subject Name: Advanced Fiber Properties

Time: 10.30 am – 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define structure of cotton fiber morphologically.	**07**
	(b)	Give briefly the general view of fine structures of fibres.	**07**
Q.2	**(a)**	What is meant by standard relative humidity and temperatures maintained in testing lab for different testing of textile fibres/yarns/fabric samples?	**07**
	(b)	How testing results of textile samples influenced by relative humidity and temperature of atmosphere?	**07**
		OR	
	(b)	Define relation between regain and relative humidity.	**07**
Q.3	**(a)**	How fine structure of the fiber is analysed instrumentally?	**07**
	(b)	What is your view about moisture equilibrium? How specimen reaches equilibrium with time?	**07**
		OR	
Q.3	**(a)**	Describe the instrument used to measure the degree of order and orientation of polymers.	**07**
	(b)	How the glass transition temperature is measured? Explain the working of the instrument in short.	**07**
Q.4	**(a)**	What are those factors that determine the results of tensile experiments of textile fibres/yarns?	**07**
	(b)	Define load ï elongation curves of an individual fibre.	**07**
		OR	
Q.4	**(a)**	Define (i) strength (ii) work of rupture (iii) initial modulus (iv) compliance and (v) work factor of textile fibre.	**07**
	(b)	Explain Meredithôs construction to define yield stress and yield strain.	**07**
Q.5	**(a)**	What is the effect of fine structure of fibres on the tensile properties?	**07**
	(b)	Explain elastic and plastic deformations of textile fibres.	**07**
		OR	
Q.5	**(a)**	Establish elastic recovery plotted against stress of different fibres.	**07**
	(b)	Explain Meredithôs experiment on elastic recovery.	**07**

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