

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV(New) EXAMINATION – SUMMER 2016

Subject Code:2142904**Date:26/05/2016****Subject Name:Fibre Physics****Time:10:30 AM to 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.

		MARKS
Q.1	Short Questions	14
	1 What is Creep?	
	2 What is Absolute Humidity?	
	3 If Amonton's law is applied, well known relation obtained as T_2/T_1 = _____.	
	4 Define – Stress.	
	5 Define - Specific stress.	
	6 Define – Moisture content.	
	7 Define – Moisture regain.	
	8 What is integral heat of sorption?	
	9 What is differential heat of sorption?	
	10 Define the term Crystalline regions.	
	11 Define the term Non-crystalline regions.	
	12 What is Work of rupture?	
	13 Define - Initial Modulus.	
	14 In the ideal state, the work factor will be _____.	
Q.2	(a) Discuss structure of polyamide fibres.	03
	(b) Discuss relation between regain and relative humidity.	04
	(c) Discuss gross structure of Wool.	07
	OR	
	(c) Explain gross morphology of Cotton.	07
Q.3	(a) Explain about CRE test methods.	03
	(b) Discuss Yield point.	04
	(c) Write short note on X-ray diffraction technique.	07
	OR	
Q.3	(a) Describe Refractive index.	03
	(b) Discuss in brief about measurement of refractive indices.	04
	(c) Explain in detail about Torsional rigidity.	07
Q.4	(a) Explain about birefringence.	03
	(b) Discuss in brief about Elastic recovery.	04
	(c) Explain in detail about Fibre Swelling.	07
	OR	
Q.4	(a) Explain directional friction in wool.	03
	(b) Explain about Absorption and Dichroism.	04
	(c) Discuss in detail about measurement of fibre friction.	07

- Q.5** (a) Write basics of Static Electricity along with effects of static. **03**
(b) Discuss in brief about Thermal Transitions. **04**
(c) Discuss about Dielectric properties. **07**

OR

- Q.5** (a) Write short note on Irreversible shrinkage. **03**
(b) Discuss effect of stress and temperature on regain. **04**
(c) Discuss in detail about Electrical Resistance. **07**
