

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV(NEW) – EXAMINATION – SUMMER 2019****Subject Code:2142904****Date:09/05/2019****Subject Name: Fibre Physics****Time:02:30 PM TO 05:00 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	(a) Define the terms: (i) Load; (ii) Stress; and (iii) Specific Stress	03
	(b) Discuss various properties of polyester with respect to its structure.	04
	(c) What is difference between birefringence and dichroism? Define the quantitative term of dichroism. Explain two examples of dichroism.	07
Q.2	(a) What is difference between elongation, extension and strain?	03
	(b) Which property measures the toughness of fibre? Explain its technical aspects.	04
	(c) Describe the characteristic features and importance of stress-strain curve textile fibre.	07
	OR	
	(c) Explain with neat sketch the fine structure of wool.	07
Q.3	(a) Write short note on work factor.	03
	(b) What is yield point? Describe two geometrical methods for determination of yield point.	04
	(c) Explain the effect of humidity, temperature and light on tensile properties of fibres.	07
	OR	
Q.3	(a) State three law of friction.	03
	(b) What is 'scoop' effect? Explain with suitable example under what frictional conditions the material becomes scoop.	04
	(c) Discuss the measurement of electrical resistance of fibres.	07
Q.4	(a) Describe the technical features associated with H-bonds.	03
	(b) Explain in brief various requirements of fibre forming polymers.	04
	(c) Describe with neat diagram the working of SEM.	07
	OR	
Q.4	(a) Write a brief note on static electricity.	03
	(b) Write short note on optical orientation factor.	04
	(c) Discuss various techno physical aspects of reflection and lustre.	07
Q.5	(a) Define the terms: (i) Humidity; (ii) Moisture Regain; and (iii) Moisture Content.	03
	(b) Describe the structure of polyamide fibres.	04
	(c) Discuss about heat of sorption.	07
	OR	
Q.5	(a) Describe the structure of silk.	03
	(b) Explain the applications of X-ray diffraction.	04
	(c) Explain the structural changes in fibres on heating.	07
