Seat No.:	Enrolment No.
	Emonnent 1101

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VII • EXAMINATION - SUMMER 2015** 

Sul	bject	Code: 172806 Date:06/05/201	.5
Sul	bject [	Name: Instrumental Analysis in Textile Processing	
		(Department Elective –I)	
Tir	ne:2.3	30pm-5.00pm Total Marks: 7	<b>'</b> 0
Inst	ruction		
		<u> </u>	
	2. 3.	Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a)	Discuss the importance of instrumental analytical methods in characterization of textile materials. State various methods.	07
	<b>(b)</b>	Discuss end groups analysis of polyamides by any one method.	07
Q.2	(a)	What is difference between IR and FTIR? Describe in brief the application of IR spectroscopy in characterization of polymeric materials.	07
	<b>(b)</b>	Describe the working of SEM with neat diagram.	07
		OR	
	<b>(b)</b>	Describe the working of TEM with neat diagram.	07
Q.3		Describe the working principle of atomic force microscope. Discuss its applications in textiles.	14
		OR	
Q.3		What is NMR? Give a critical review on various types of NMR spectroscopy.	14
Q.4	(a)	Discuss the case study for the analysis of degree of substitution in any one polymer using NMR spectroscopy.	07
	<b>(b)</b>	Describe the working of zeta sizer used for the determination of particle size.	07
		OR	
Q.4		Discuss the case study for the interpretation of DTA/TGA data of modified polypropylene.	14
Q.5	(a)	Describe the working of DSC and its application in analysis of modified textile fibres.	07
	<b>(b)</b>	Describe interpretation of x-ray diffraction pattern of treated and untreated textile fibres.	07
		OR	
Q.5		Describe the basic principles of chromatography. Enlist various methods and describe any one in detail.	14

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