Seat No.: _____ Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV(NEW) – EXAMINATION – SUMMER 2019

Subject Code:2143905 **Date:25/05/2019**

Subject Name: Characterization of Nanomaterials-II

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)**	Write Down Advantages and Disadvantages of Each Mode of AFM.	**03**
	(b)	Mention materials used in SQUID	**04**
	(c)	Explain Working of AFM with suitable diagram.	**07**
Q.2	**(a)**	State and briefly explain Beer-Lambert's Law. (Equation)	**03**
	(b)	Write Down Advantages of FTIR.	**04**
	(c)	Write Down Application of AFM.	**07**
		OR	
	(c)	Explain Theory and Working Principle of UV-Vis Spectroscopy.	**07**
Q.3	**(a)**	Explain the Measurement Principle of MFM.	**03**
	(b)	Explain the Sample Analysis Process of FTIR.	**04**
	(c)	Draw and Label Diagram of UV-Vis Spectroscopy Setup?	**07**
		OR	
Q.3	**(a)**	Name all the Component of AFM.	**03**
	(b)	Write Down Application of Impedance Spectroscopy.	**04**
	(c)	Explain Components and Mode of Operation.	**07**
Q.4	**(a)**	Name any three Spectroscopy Techniques and describe it briefly.	**03**
	(b)	Draw Layout of FTIR.	**04**
	(c)	Explain SQUID.	**07**
		OR	
Q.4	**(a)**	Write Down Full Form of SQUID and briefly describe its type.	**03**
	(b)	Write Down Application of UV-VIS Spectroscopy.	**04**
	(c)	What are Limitations of AFM.	**07**
Q.5	**(a)**	Write Down Application of MFM.	**03**
	(b)	Describe Importance of Impedance Spectroscopy.	**04**
	(c)	Explain Magnetic Force Microscopy.	**07**
		OR	
Q.5	**(a)**	Define Tc in Superconductor.	**03**
	(b)	Explain Impedance Spectroscopy.	**04**
	(c)	Explain Working Principle of VSM with Diagram.	**07**

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