Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – WINTER • 2014

Subject Code: 2133904 Date: 18-12-2014

Subject Name: Characterization of Nanomaterials - I

Time: 02.30 pm - 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.**

Q.1	**(a)**	Write a short note on Scanning Electron Microscopy	**07**
	(b)	How to find out particle size using X-ray diffraction technique	**07**
Q.2	**(a)**	Explain Bragg`s law.	**07**
	(b)	Write down applications of Scanning Electron Microscopy	**07**
		OR	
	(b)	Give the difference between the optical microscopy and electron microscopy.	**07**
Q.3	**(a)**	Describe the role of vacuum in the TEM.	**07**
	(b)	Give the difference between the TEM and SEM.	**07**
		OR	
Q.3	**(a)**	Write a short note on Transmission Electron Microscopy.	**07**
	(b)	Write a short note on Capacitance measurement of thin film.	**07**
Q.4	**(a)**	Write a short note on Advanced Optical Microscopy.	**07**
	(b)	Draw the schematic diagram of magnetic lenses.	**07**
		OR	
Q.4	**(a)**	What are the applications of X-ray diffraction technique?	**07**
	(b)	Explain the applications of TEM microscopy.	**07**
Q.5	**(a)**	Write a short note on X-ray diffraction technique.	**07**
	(b)	Write a short note on four probe method to measure resistivity.	**07**
		OR	
Q.5	**(a)**	Write a short note on Junction Testing.	**07**
	(b)	Write a short note on ellipsometry technique.	**07**

****