

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– III (NEW) EXAMINATION – SUMMER 2015

Subject Code: 2133904**Date: 27/05/2015****Subject Name: CHARACTERIZATION OF NANOMATERIALS-I****Time: 02.30pm-05.00pm****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 full form of SEM and describe briefly SEM characterization. **07**
(b) Explain the procedure to find out particle size using X-ray Diffraction Technique. **07**
- Q.2** (a) Short note: Bragg's law **07**
(b) Describe the application of SEM characterization technique. **07**
- OR**
- (b) Give the Difference: Optical microscopy and electron microscopy. **07**
- Q.3** (a) What is the role of Vacuum in Transmission Electron Microscopy? **07**
(b) What is the difference between SEM and TEM? Explain it. **07**
- OR**
- Q.3** (a) Describe: Transmission Electron Microscopy. **07**
(b) Explain Capacitance measurement of thin film. **07**
- Q.4** (a) What is AOM? Describe it. **07**
(b) Draw neat and clean diagram of Magnetic lenses. **07**
- OR**
- Q.4** (a) Write down the application of XRD technique. **07**
(b) Explain the procedure for measuring the resistivity with the help of four probe method. **07**
- Q.5** (a) Describe briefly on Junction Testing. **07**
(b) What is the Ellipsometry Technique? Describe it. **07**
- OR**
- Q.5** (a) Define TEM and describe its application briefly. **07**
(b) Short note: X-ray Diffraction Technique. **07**
