

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 171706

Date: 29/11/2011

Subject Name: Instrumentation for Nanotechnology

Time: 10.30 am-01.00 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) Why almost all the properties changes in Nano-materials? **07**
(b) Describe, in brief, various processes between electron beam and the sample. **07**
- Q.2** (a) Write a short note on development of Microscopy **07**
(b) Explain why spatial resolution of STM is better than AFM? **07**
- OR**
- (b) What are the basic differences between an SEM and TEM? **07**
- Q.3** (a) Describe in brief: applications of STM. **14**
- OR**
- Q.3** (a) Explain different method used in semiconductor device characterization. **14**
- Q.4** (a) Explain techniques through which magnetic noise coupling can be eliminated. **07**
(b) Explain difference between safety ground and signal ground. **07**
- OR**
- Q.4** (a) Explain techniques to reduce capacitive coupled noise. **07**
(b) Explain various intrinsic noise sources. **07**
- Q.5** (a) Discuss issues and techniques related to low level current measurement. **14**
- OR**
- Q.5** (a) Discuss issues and techniques related to low level voltage measurement. **14**
