

# INDIAN INSTITUTE OF TECHNOLOGY MANDI

## QUIZ - I

### Nanoscience: Understanding Small Systems (CY 342)

**Full Marks: 10      Date: 12.03.2012      Time: 50 min.**

**Answer ALL Questions:**

1. Nanometer is a magical point on the dimension scale – why? [1]
2. What is the difference between nanoscience and nanotechnology? [1]
3. Name two things you are familiar with that are roughly 1 millimeter in size. Name something that is approximately 1 micrometer in size. Name something that is 1 nanometer in size. [1]
4. What is the difference between quantum dot, quantum wire and quantum well? [1]
5. Does really surface area increase when size is reduced? Explain with simple examples. [1]
6. When & where Feynman delivered his lecture on ‘nano’ & what is the name of that lecture? [1]
7. Nanotechnology is new but research in nanometer scale is not new – explain. [1]
8. Provide a brief synopsis of the most famous debate on nanotechnology/nanobots (Richard Smalley vs. Eirc Drexler). [1]
9. Explain the role of top down and bottom up approaches in understanding nanosystems. [1]
10. “Till today, picotechnology and femtotechnology do not make sense in the way that nanotechnology does” – explain. [1]