

**R09**

Code No: 09A60206

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD**

**B. Tech III Year II Semester Examinations, June - 2014**

**NANO TECHNOLOGY**

**(Common to AE, AME, EEE, ECE, EIE, ME)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions  
All questions carry equal marks**

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1. Explain the importance of nanoscale materials and write notes on different types of Nanostructured materials.
2. What is quantum confinement and explain about the three dimensional confinement in the nanomaterials.
3. What are Fullerenes, explain C60 and C240 Nanostructures? Explain in detail along with applications.
4. Describe the following physical method
  - a) Arc discharge
  - b) Chemical vapor deposition.
5. Explain working principle of AFM and its applications.
6. Explain importance of core shell nanoparticles in drug delivery systems and bone tissue treatment.
7. Explain the following:
  - a) Single Electron transistors
  - b) Tunneling Magneto Resistance.
8. Describe the principle involved in X-ray based lithography and SEM based nanolithography.

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