

R09

Code No: 56014

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, December - 2017

NANO TECHNOLOGY

(Common to AE, EEE, ECE, ME)

Time: 3 hours

Max. Marks: 75

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

- 1.a) Write a note on the Magnetization process in Magnetic materials.
- b) Write about effect of bulk nanostructuring on magnetic properties. [7+8]
2. Explain in detail about the concept of Mobility and Semiconducting nanoparticles.[15]
3. Write short notes on:
 - a) Electrical properties of CNT's
 - b) Mechanical Properties of CNT's. [7+8]
4. Write in detail about the synthesis of Nanotubes by Arc-discharge method with a schematic diagram along with one example and also write the advantages, disadvantages and applications. [15]
5. What is X-ray diffraction? Derive Bragg's law. [15]
6. What are the essential biocomputational approaches for nanotechnologies in cancer drug therapy? [15]
7. Write notes on:
 - a) Single Electron transistors
 - b) Giant magneto resistance
 - c) Tunneling magneto resistance. [5+5+5]
8. Explain in detail about
 - a) Electron beam lithography and nanotechnology
 - b) Instrumentation of electron beam lithography
 - c) electron-solid interactions. [5+5+5]

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