



USN

10MT831

Eighth Semester B.E. Degree Examination, June/July 2019
Nano Technology

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Discuss the scope of nano technology. (10 Marks)
b. Explain the societal implications of nano technology. (10 Marks)
- 2 Explain the principal, working and applications of:
a. Scanning probe microscope (10 Marks)
b. X –ray diffraction. (10 Marks)
- 3 a. Explain the synthesis and purification of fullerenes. (10 Marks)
b. Write a short note on “Carbon nano tubes”. (10 Marks)
- 4 a. Explain the growth process and phase transitions of nanolayers on gold. (10 Marks)
b. Give the type and properties of gas phase clusters. (10 Marks)

PART – B

- 5 a. Explain the synthesis of semi conductor quantum dots. (10 Marks)
b. Give the properties of semi conductor quantum dots and mention its uses. (10 Marks)
- 6 a. Discuss the concepts in core shell nanoparticles. Give the properties and mention its applications. (10 Marks)
b. Explain the synthesis and characteristics of monolayer protected metal nanoparticles. (10 Marks)
- 7 a. Define nanosensors. Discuss the type of nanosensors. Give the applicators. (10 Marks)
b. Write a short note on “nanomedicines”. (10 Marks)
- 8 a. Explain the covalent and noncovalent approaches of molecular nanomachines. (10 Marks)
b. Describe the applications of nanotribology. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.