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15NT664

Sixth Semester B.E. Degree Examination, June/July 2019
Nanotechnology in Biomedical Engineering

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain physical synthesis of Nanomaterial in detail. (06 Marks)
b. What are CNT's? Discuss biomedical applications of CNT's in detail. (10 Marks)

OR

- 2 a. Discuss chemical methods of synthesis with example. (08 Marks)
b. Describe Biosynthesis of nanoparticles with an example. (08 Marks)

Module-2

- 3 a. Write a note on impact of nanotechnology on surgical blades and suture needles. (06 Marks)
b. Elucidate nanorobotics with two examples. (10 Marks)

OR

- 4 a. Define Nanoshell. Explain how nanoshells fight against Cancer Tumors. (08 Marks)
b. With the neat sketch explain optical tweezers. (08 Marks)

Module-3

- 5 a. Give a short note on Nanoprobes as biophotonics. (06 Marks)
b. With the neat sketch, explain about diagnostic biosensors with an example. (10 Marks)

OR

- 6 a. Write a note on nano chips for HIV deflection. (06 Marks)
b. Describe role of nanoparticles in magnetic resonance imaging. (10 Marks)

Module-4

- 7 a. Briefly explain natural nanocomposites system. (06 Marks)
b. Describe about role of nanomaterials in dentistry. (10 Marks)

OR

- 8 a. Explain the role of nanomaterials in bone substitutes. (08 Marks)
b. Explain implantable materials for vascular intervention. (08 Marks)

Module-5

- 9 a. Discuss about the antibody conjugated nanoparticles and their applications (06 Marks)
b. Write a note on targeted drug delivery using dendrimers. (10 Marks)

OR

- 10 a. What are Liposomes? Explain the role of liposomes in nanoparticulate drug delivery system. (08 Marks)
b. Explain the role of colloidal nanosilver nanoparticles as an effective nano antibiotic. (08 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.