CBCS SCHEME

USN | | | | | | | | | | |

15NT664

Sixth Semester B.E. Degree Examination, June/July 2018
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. Write a note on any two nanomaterial characterisation techniques and explain its principle. **(08 Marks)**

b. Elucidate protein and Glyco – nanotechnology in detail. **(08 Marks)**

OR

2 a. Explain in detail the Carbon nanotube and its bio applications. **(10 Marks)**

b. Explain the synthesis of nano-materials by physical method with an example. **(06 Marks)**

Module-2

3 a. What is nanoshell? Elucidate the fighting of tumors with nanoshells. **(08 Marks)**

b. Describe about optical tweezers with neat labelled diagram. **(08 Marks)**

OR

4 a. Write a note on chemotherapy and immouno therapy and elucidate how gold nano particles are used in chemotherapy and immune therapy. **(10 Marks)**

b. Write a note on biomotor with a brief description on ATP syntheses structure. **(06 Marks)**

Module-3

5 a. Write a short note on optical nanoparticles sensors for quantitative intracellular imaging. **(08 Marks)**

b. What is nanophotonics? Write a short note on nanophotonics. **(08 Marks)**

OR

6 a. Give an account on functionalized metallic nanoparticles and their applications in colorimetric sensing, dip stick tests. **(08 Marks)**

b. Explain in detail about diagnostic biosensor with an example. **(08 Marks)**

Module-4

7 a. Give an account on implantable materials for vascular interventions. **(08 Marks)**

b. Write a short note on active implantable device and bionics. **(08 Marks)**

OR

8 a. What are polymeric nanofibres? Mention the applications of polymeric nanofibres. **(08 Marks)**

b. Explain the role of nano-materials in bone substitutes. **(08 Marks)**

Module-5

9 a. What are Liposomes? Explain the role of liposome's in nanoparticulate drug delivery systems. **(08 Marks)**

b. Give an account on sustained and targeted drug delivery and the use of nanoparticles in both delivery systems. **(08 Marks)**

OR

10 a. Give an account on Nano vectors for gene therapy. **(10 Marks)**

b. Explain the role of Colloidal nanosilver particles as an effective nano antibiotic. **(06 Marks)**

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