

**M. Tech. (Nano Technology) Sem-IV (CBCS – 2015 Course) :
SUMMER - 2019**

SUBJECT-SELF STUDY PAPER-II: NANOBIOELECTRONICS

Day: Thursday
Date: 13/06/2019

S-2019-3365

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data if necessary.

SECTION I

Q.1 Discuss how DNA Nanotechnology can prove useful in the biomedical domain. (10)

OR

Describe various C based nanostructures that find potential applications in Nanobioelectronics. Give suitable examples.

Q.2 With a neat sketch, describe the working principle and operation of a biosensor. (10)

OR

List various top down processes for semiconductor nanofabrication. Describe any one in detail.

Q.3 Explain the significance of semiconductor nanowires in the field of Nanobioelectronics. (10)

OR

Define 'Impedance biosensors'. Add a note on usefulness of DNA for the same.

SECTION II

Q.4 Define the term 'Nanomedicine'. State the usefulness of Nanotechnology in treatment of various diseases. (10)

OR

Why is biofunctionalization of nanomaterials necessary to be undertaken prior to their biomedical applications? Justify giving suitable examples.

Q.5 Give an overview about glucose nanosensors. (10)

OR

Explain the significance of protein nanopores in the biomedical domain.

Q.6 Describe the suitability of nanobots for cancer diagnosis and treatment. (10)

OR

Write a short note on role of Nanotechnology in regenerative medicine.

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