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Total Number of Pages : 01

B.Tech
PBT8J201

8th Semester Regular Examination 2018-19

BIO-NANOTECHNOLOGY

BRANCH : BIOTECH

Max Marks : 100

Time : 3 Hours

Q.CODE : F006

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- What is EPR effect?
- Write two examples of DNA nano structures?
- Give few lists of enzymes involved in biosensors.
- How Hybrid materials used as a bottom-up approach for nanotechnology applications
- What are polymeric nanocontainers? Write its use?
- How respirocytes act as an artificial red blood cell?
- How Quantum dots used to obtain nanoparticle assemblies with designed properties
- What are Micelles?
- Why C-60 molecules are called bucky balls? Give reasons?
- Define lithography technique.

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Explain the steps of construction of nanomachines?
- Differentiate between single wall and multi wall carbon nanotubes.
- Brief explain synthesis and purification of cyclic peptides.
- What are r-DNA technology tools useful in creating biological nanostructures?
- Discuss the various applications of SEM, TEM and AFM in Nanotechnology
- Explain the applications of nano biotechnology for human health.
- Discuss micro fabrication technique in detail?
- Modern biomaterials-the legacy of evolution. Justify
- Explain the role of nanomedicine in AIDs treatment? Support your answer with suitable example
- Write in detail about nanotechnology-based analog of monoclonal antibodies.
- Biochips connecting to the DNA computers. A tool for biomedical application. justify
- Differentiate between self assembly and self organization of nanostructure?

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

- Q3 Describe the possible applications of nanotechnology in developing drug delivery tools? (16)
- Q4 What do you mean by information –driven nanoassembly? Explain with examples the role of energetics, enzymes in nanoassembly? (16)
- Q5 What are biosensors? How do they function? How does nanotechnology support the designing of biosensors? (16)
- Q6 How can biomolecules be used for nanomaterial assembly? Discuss. (16)