QP Code: RD17001053 Reg. No | | | | | | | | | | | AR 17

GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, December – 2020

(Seventh Semester)

BBTPE7033 – NANO BIOTECHNOLOGY

(Biotechnology)

Time: 2 hrs Maximum: 50 Marks

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) (1 x 10 = 10 Marks)

Q.1. Answer ***ALL*** questions

a. Quantum dots are _____ in nature.
   (i) Inorganic. (ii) Organic.
   (iii) Biologic. (iv) Metalic.

b. What are the approaches used in making nano systems?
   (i) Top down (ii) Bottom up
   (iii)Both a and b (iv) Neither a nor b

c. A nano biological recognition component,which is involved in interacting with the analyte molecule is called as _____.
   (i) Biosensor (ii) Probe
   (iii) Nanobiosensor. (iv) Quantum dots

d. DNA as smart glue uses_____.
   (i) Base pairing. (ii) Resins
   (iii) Gums (iv) Colloids

e. What type of nano materials has antioxidant properties?
   (i) Nano wires. (ii) Nano tubes.
   (iii) Fullerenes. (iv) Bucky balls.

f. The width of carbon nanotube is _____nm.
   (i) 1 (ii) 1.3
   (iii) 1.55 (v) 10

g. TEM is _____.
   (i) Transmission Electron Microscope. (ii) Transmit Electron Microscope
   (iii) Transmission Electrical Microscope (iv)Transmit Electrical Microscope.

h. Self-assembled nanosystems used for targeting subcellular organelles such as mitochondria are called _____.
   (i) Nanoparticles. (ii) Nanoassemblers.
   (iii) Nanocarriers. (iv) Nanofilms.

i. Substances that affect neurotransmitter on components of the nervous system are called as _____.
   (i) Acetylcholine. (ii) Phosphotidyl Choline.
   (iii) Vitamin B12 (iv) Cholinergics

j. Which metal is used with nanoparticles for antibiotic delivery?
   (i) Gold. (ii) Titanium
   (ii) Zinc (iv) Silver

PART – B: (Short Answer Questions) **(2 x 5 = 10 Marks)**

Q.2. Answer ***ALL*** questions

a. Define Nanotechnology.

b. Write short note on 'C Dots' (Carnell Dots)

c. Mention how UV-Visis used in characterizing nano structures

d. How can the mapping of DNA of a newly born baby be useful ?

e. "Bionanomotors may be able to transport and manipulate molecules"- Discuss the above statement

PART – C: (Long Answer Questions) **(6 x 5 = 30 Marks)**

Answer ***ANY FIVE*** questions Marks

3. Discuss the various applications of nanotechnology (6)

4. Explain in detail Electrical, magnetic, optical, thermal, and mechanical properties of nanostructured materials (6)

5. Examine Scanning electron microscopy working principle (6)

6. Interpret the process involved in wet chemical synthesis of nanoparticles (6)

7. Illustrate the importance of surface functionalization of nanomaterials for Nanomedicine (6)

8. Demonstrate how Immobilized nanoparticles are used in biopesticides delivery applications. (6)

9. Describe why Nano biosensors is described as the future for diagnosis of disease? (6)

10. What are biopolymers? Give examples and also state the advantages of biopolymers? (6)

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