Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 11

M.Sc. (BT) EL-I (2018 Batch) (Sem.-1)

NANOBIOTECHNOLOGY

Subject Code : MBT-112

Paper ID : [75665]

Time : 3 Hrs. Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SEVEN questions carrying SIX marks each and students have to attempt any FIVE questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Describe briefly :

a) Biomolecular sensing

b) Biomaterials

c) Nanocarriers

d) Nanobioelectronic devices

e) Polymer nanocontainers

f) Carbon nanotubes

g) Quantum dots

h) Buckyballs

i) Smart packaging

j) Nanofertilizers

SECTION-B

2. Describe the opportunities and promises of nanobiotechnology.

3. Describe microbial production of inorganic nanoparticles giving suitable examples.

4. Describe the impact of nanomaterials in biological processes.

5. Describe the role of nanotechnology in the development of insecticides.

6. Explain briefly molecular recognition and flexibility of biomaterials.

7. Describe the synthesis of hybrid conjugates of gold nanoparticles.

8. What do you understand from nanostructure assembly using DNA? Explain briefly.

SECTION-C

9. Describe the applications of nanotechnology in food processing, food safety and biosecurity, toxin and contaminant detection.

10. What is nucleic acid engineering? Describe the modifications of DNA for technological applications.

11. What is nanobiotechnology? Describe the historical perspectives of integration of biology, chemistry and material sciences.