Roll No. | | | | | | | | | | | | | **Total No. of Pages : 01**

Total No. of Questions : 08

M.Tech. (Biotechnology) (Sem.–3)

NANOBIOTECHNOLOGY

Subject Code : MTBT-306-18

M.Code : 76760

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1.Attempt any FIVE questions out of EIGHT questions.

2.Each question carries TWELVE marks.

1. Describe briefly nanofabrication techniques. Also highlight the surface functionalization of nanoparticles giving suitable examples.
2. Describe briefly physical, chemical and biological methods for the synthesis of nanomaterials with merits and demerits in each case.
3. Describe various methods of structural characterization of nanomaterials with advantages and disadvantages in each case.
4. Discuss the impact of nanomaterials in biological processes. Also highlight tolerance by immune systems and toxicity.
5. Describe briefly mechanical, optical and non-linear optical properties of nanomaterials
6. What is nucleic acid engineering? Describe the modifications of DNA for nanotechnological applications and nanostructured assembly.
7. What is a biosensor? Describe briefly nanowires, SERS active nanoparticles and quantum dots.
8. Give an overview of smart devices for medical field and miniaturized devices for drug delivery with merits and demerits.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.