

No. of Printed Pages : 03

Roll No.

BB-225

M. Tech. EXAMINATION, May 2017

(Second Semester)

(B. Scheme) (Main & Re-appear)

(BT)

BT-522-B

BIONANOTECHNOLOGY

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-10/17)M-BB-225

P.T.O.

Unit I

1. Define nanotechnology. Explain optical and electrical behaviour of nanostructures. **10**
2. Write short notes on any *two* of the following :
 - (a) Nanolithography **5**
 - (b) Controlled flame synthesis. **5**
 - (c) Liquid phase synthesis.

Unit II

3. What is X-ray diffraction ? Explain XRD technique for crystal/powder sample analysis. **10**
4. Explain any *two* of the following :
 - (a) Atomic force microscopy **5**
 - (b) DNA-based nanostructures **5**
 - (c) LEED. **5**

Unit III

5. What is electron microscopy ? Explain any *one* of the following : **10**
 - (a) TEM
 - (b) SEM.
6. Explain nanodrug delivery system. **10**

Unit IV

7. (a) What are Biosensors ? Give examples. **5**
(b) Role of nanoparticles for cleaning the environment. **5**
8. Give the detailed explanation of NMR. **10**