

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-IV • EXAMINATION – SUMMER 2013

Subject Code: 180404

Date: 10-05-2013

Subject Name: Nano-biotechnology

Time: 10.30 am - 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Write short note on fundamental sciences behind nano-biotechnology. **10**

(b) In short describe the historical background of nano-biotechnology. **04**

Q.2 (a) Enlist various applications of nano-biotechnology. **07**

(b) With the help of suitable diagram explain the construction of nanopores. **07**

OR

(b) Explain the properties and application of carbon nanotube. **07**

Q.3 (a) With the help of suitable diagram explain the binary membrane system of neural calcium signaling. **07**

(b) What are the emerging fields in nano-biotechnology **07**

OR

Q.3 (a) The properties of cell make it a perfect nano-biomachine. Comment. **10**

(b) Explain the link between signaling and molecular movement during cell division process. **04**

Q.4 (a) With the help of suitable diagram explain viterbi algorithm. **07**

(b) Explain the term “Postman in Moleware”. **07**

OR

Q.4 (a) Write short notes on moleware communication. **07**

Q.4 (b) What are the methodologies learned from the cell for information processing and communication? **07**

Q.5 (a) Enlist various applications of biomaterials. **07**

(b) Write short notes on biosensors and electromagnetic sensors. **07**

OR

Q.5 (a) What is biomaterial? Explain its various types. **07**

(b) Explain how nanoluminescent tags work. **07**
