

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER–VIII • EXAMINATION – SUMMER • 2014

Subject Code: 180404**Date: 29-05-2014****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)** What are the risks of nanoparticles in medicine? **07**
(b) What are the basic sciences behind nanotechnology? **07**
- Q.2 (a)** What is carbon nanotube? Explain one method to construct it. **07**
(b) Explain the steps in construction of nanopore. **07**
- OR**
- (b)** Explain the motor function of RM enzyme. **07**
- Q.3 (a)** Explain the terms Robustness, Efficiency and Adaptability in view of cell as nano-biomachine. **07**
(b) With the help of two examples explain the link between signaling pathway and molecular movement. **07**
- OR**
- Q.3 (a)** Explain the terms first messenger, second messenger, cargo molecule and signaling pathways with example. **07**
(b) Explain the role of Calcium release in the regulation of Neuronal excitability. **07**
- Q.4 (a)** With the help of neat diagram explain the network coding in molecular informatics. **07**
(b) Comment on movable nano-biomachine. **07**
- OR**
- Q.4 (a)** With the help of neat diagram explain the information theory of NanobioICT. **07**
(b) What are the measurement technologies used to observe nanobiomachine? **07**
- Q.5 (a)** What are the various applications of biomaterial? **07**
(b) What is photodynamic therapy? **07**
- OR**
- Q.5 (a)** Explain the properties of biomaterials. **07**
(b) What are the various emerging fields of nano-biotechnology? **07**
