Seat No.: _____ Enrolment No._____

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**

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