

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VIII (NEW) - EXAMINATION – SUMMER 2018**

**Subject Code: 2183908****Date: 02-05-2018****Subject Name: Nanotechnology in Healthcare****Time: 10:30 AM to 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.

		MARKS
<b>Q.1</b>	(a) What is cellular nanomachine?	<b>03</b>
	(b) Explain new generation of nanotools.	<b>04</b>
	(c) Describe building blocks of life with schematic diagram.	<b>07</b>
<b>Q.2</b>	(a) Give name of three nanomaterials used in medicine.	<b>03</b>
	(b) Describe any two nanoparticle's applications as diagnostic.	<b>04</b>
	(c) Write a short note on targeted drug delivery.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(c) Explain nanoparticles as therapeutic applications.	<b>07</b>
	(a) What is biosensor?	<b>03</b>
	(b) Describe single molecule detection techniques for the monitoring of cellular activity at the nanoscale level.	<b>04</b>
	(c) Explain liposome based delivery.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) What are micro fluidic devices?	<b>03</b>
	(b) Explain magnetic nanoparticles as contrast agent for medical diagnostics.	<b>04</b>
	(c) Write a short note on bio-inspired nanomaterials.	<b>07</b>
<b>Q.4</b>	(a) Explain membrane in short.	<b>03</b>
	(b) Describe nanoprobe based biosensors for the detection of chemical and biological entities.	<b>04</b>
	(c) Write a short note on therapeutic nanodevices.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) What are nanosensors?	<b>03</b>
	(b) Explain nanopore methods for DNA detection.	<b>04</b>
	(c) Write applications of nanotherapeutic devices.	<b>07</b>
<b>Q.5</b>	(a) What is top-down synthesis approach?	<b>03</b>
	(b) Explain nanopore methods for DNA sequencing.	<b>04</b>
	(c) Describe nanosystems for healthcare monitoring.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) What is bottom-up synthesis approach?	<b>03</b>
	(b) Explain single chip electrophoresis system in short.	<b>04</b>
	(c) Write a short note on nanotube based membrane systems.	<b>07</b>

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