

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII(NEW) EXAMINATION – SUMMER 2019****Subject Code: 2183904****Date:09/05/2019****Subject Name: Nanosensors and Transducers****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
Q.1	(a) Define Transducers and its Types briefly.	03
	(b) Write a short note on Nanosensors.	04
	(c) Explain Nano electronics based sensing with five detailed examples.	07
Q.2	(a) Explain Future Requirement of Nanotechnology in Industries.	03
	(b) Describe Impact of Nanotechnology in Health and Wellness.	04
	(c) Explain the Opportunities of Nanotechnology in Sensing.	07
OR		
	(c) Explain Electro transduction (One Dimensional Nanostructure Based Sensor, Liquid Gas Sensor Arrays and Label Free Biological Sensor Arrays).	07
Q.3	(a) Define Magnetic Transduction.	03
	(b) Explain Nano Based Sensing in Environmental Monitoring.	04
	(c) Explain the processing of sensing device (Packaging, Workforce, Roadmap).	07
OR		
Q.3	(a) Define Mechanical Transduction.	03
	(b) Describe Application of Nanosensing in Agriculture and Food Industries.	04
	(c) Describe Enhancement in Specificity.	07
Q.4	(a) Describe Spectroscopic Transduction.	03
	(b) Describe Nanotechnology Based Sensing in Energy, Transportation and National Securities.	04
	(c) Elaborate: Nanotechnology Enabled Solutions (Enhancement in Specificity)	07
OR		
Q.4	(a) Describe Electromagnetic Transduction.	03
	(b) Explain Fabrication of Sensing Devices.	04
	(c) Describe Nanophotonics Based Sensor with five Detailed Examples.	07
Q.5	(a) Define Conducting Polymer.	03
	(b) Explain Foundries for Sensing Devices.	04
	(c) Explain the processing of sensing device (designing and modelling)	07
OR		
Q.5	(a) Explain Sensing System.	03
	(b) Describe Standardization for Sensing Device.	04
	(c) Elaborate: Future requirement of nanotechnology in sensing.	07