Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII (NEW) - EXAMINATION – SUMMER 2018

Subject Code: 2183904 Date: 30/04/2018

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 Nano materials as sensor and give their examples.	03
	(b)	Write short note on Future scope of sensor.	04
	(c)	Explain nano sensor and their applications in industries.	07
Q.2	(a)	Describe metal oxides base sensor.	03
	(b)	What is sensitivity of sensor? Explain it with example.	04
	(c)	Define gas sensor and explain it.	07
		OR	
	(c)	Write a short note on semiconducting sensor.	07
Q.3	(a)	Describe nano electronic materials base sensor.	03
	(b)	Explain how sensor morphology affects on sensitivity of sensor.	04
	(c)	What is photonics? Explain Nano photonics and their sensitivity	07
		OR	
Q.3	(a)	Describe the applications of nano sensor in medical.	03
	(b)	How nano sensor useful in food industries? Explain it.	04
	(c)	Explain environment sensitive nano sensor and their impact on environment.	07
Q.4	(a)	Write importance of nano sensor in agriculture field.	03
	(b)	Describe impact of nano sensor in renewable energy source.	04
	(c)	Write a short note on use of nano sensor in transportation and in national security sector.	07
		OR	
Q.4	(a)	What is transducer and nano transducer? Give their examples.	03
	(b)	Explain one dimensional nano sensor.	04
	(c)	Describe liquid and nano gas sensors.	07
Q.5	(a)	What is carbon nano tubes and CNT base sensor? Give their examples.	03
	(b)	Explain nano ceramics as sensor.	04
	(c)	Explain electromagnetic and magnetic transduction	07
		OR	
Q.5	(a)	Explain fabrication of sensor.	03
	(b)	What is road map of fabrication? Explain it.	04
	(c)	Explain Mechanical and spectroscopy transduction.	07

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