

Model Question Paper-1/2 with effect from 2021(CBCS Scheme)

USN

--	--	--	--	--	--	--	--	--	--

7th Semester B.E. Degree Examination Subject Title: Micro and Nano Scale Sensors and Transducers

TIME: 03 Hours

Max. Marks: 100

- Note: 01. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
02. Draw neat figures wherever necessary.

Module -1			*Bloom's Taxonomy Level	COs	Marks
Q.01	a	Explain the theory of capacitive pressure sensors.	L3	CO 1	10
	b	Explain the structure of inductive pressure sensors.	L2	CO 1	10
OR					
Q.02	a	Explain the theory of ultrahigh sensitivity sensors.	L3	CO 1	10
	b	With a neat graph explain the experimental result of total pressure acting on the pressure sensors.	L3	CO 1	10
Module-2					
Q. 03	a	Explain the principle of operation of new acceleration sensor.	L2	CO 2	10
	b	Describe the theory of CO gas sensors.	L2	CO 2	10
OR					
Q.04	a	Explain in detail about smoke detectors.	L2	CO 2	10
	b	Describe the structure of CO gas sensor and write its advantages.	L2	CO 2	10
Module-3					
Q. 05	a	Explain the theory of moisture sensors with expressions.	L3	CO 3	10
	b	Explain the auxiliary experimental results of moisture sensors.	L3	CO 3	10
OR					
Q. 06	a	Explain the theory of optoelectronic microphone.	L3	CO 3	10
	b	Explain the flowchart of the code used in conjunction with the image processing board	L3	CO 3	10

Module-4					
Q. 07	a	Explain in detail “Lab on chip sensors” with neat diagram.	L2	CO 4	10
	b	Explain the principle of operation of magnetic field sensors.	L2	CO 4	10
OR					
Q. 08	a	Explain the deviation of the electronic path in horizontal direction of the magnetic field sensors.	L3	CO 4	10
	b	Describe about the bending radius of the generated free electrons in magnetic field sensor.	L3	CO 4	10
Module-5					
Q. 09	a	Explain the theory of operation of the aircraft icing detector.	L3	CO 5	10
	b	Explain the principle of operation of the α -particle icing detector.	L2	CO 5	10
OR					
Q. 10	a	Determine the turn ON condition of the MOSFET with the expressions.	L3	CO 5	10
	b	Explain the experimental results of testing with dry air, lost particles, large condensed water droplets and small crystals of ice.	L2	CO 5	10

*Bloom’s Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.