



BRAINWARE UNIVERSITY

Term End Examination 2023-2024 Programme - B.Tech.(ECE)-2019/B.Tech.(ECE)-2020 Course Name – Sensors and Transducers Course Code - OEC802B (Semester VIII)

Full Marks : 60	Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Croup A

15

	Group-A	
* (Multiple	e Choice Type Question) 1	x 15=1
e correct alternative from the	e following :	
	an ang ina mililaga nagatidi kacalan ata	
the following error is caused	by a reversal of measured property?	
sis	b) Noise	
tion error	d) Quantization error	
the following is not an analo	g sensor?	
ometer	b) Force-sensing resistors	
rometers	d) None of the mentioned	
is used to prevent o	scillation in moving system.	
tory system	b) Controlling	
ng system	d) Deflecting	
hermocouple generate outp	ut voltage according to	
parameters	b) Humidity	
rature	d) Voltage	
nat change in output of sense	or with change in input is	
hold	b) Slew rate	
vity	d) None of the mentioned	
material that is used in photo	conductive cell	
um	b) Quartz	
lle salt	d) Lithium sulphate	
which of the following can be		
lic diaphragm	b) Fluid expansion system	
le	d) Bourdon tube	
which of the following can be	measured using a Wheatstone bridge?	
ance only	b) Capacitance only	
tance only	d) Resistance, capacitance, inductance,	
	the following error is caused sis tion error the following is not an analogometer cometers is used to prevent outory system in system in the following is not an analogometer cometers is used to prevent outory system in the following generate output parameters rature in at change in output of sense hold wity in the following can be lic diaphragm le which of the following can be ance only	the following error is caused by a reversal of measured property? sis b) Noise d) Quantization error the following is not an analog sensor? ometer b) Force-sensing resistors ometers d) None of the mentioned is used to prevent oscillation in moving system. tory system b) Controlling d) Deflecting thermocouple generate output voltage according to parameters b) Humidity trature d) Voltage nat change in output of sensor with change in input is hold b) Slew rate vity d) None of the mentioned material that is used in photo conductive cell um b) Quartz the salt d) Lithium sulphate which of the following can be used for measuring temperature? lic diaphragm b) Fluid expansion system the d) Bourdon tube which of the following can be measured using a Wheatstone bridge? ance only

(ix) Determine the uses that convert displacement to pressure conversion?

c) Vi	apper nozzle system scometer lacement to pressure systems are used for r	b) Gyroscope d) None of the mentioned	
a) Di c) Ac	splacement celeration stive transducers are	b) Velocity d) Force	
c) Eit	imary transducers her primary or secondary ict, which of the following is the correct rela	b) Secondary transducers d) None of the mentioned ationship for sensitivity?	
c) Vo	lt/watt lt/amp iconductor used in sensors will be	b) Watt/volts d) Volts	
a) Pu c) Pu	re form re or doped form ose the following act as magneto-resistive n	b) Doped form d) None of the mentioned naterial	
a) Bis c) Bo	smuth oth bismuth and antimonide amatic load cells are suitable for measuring	b) Antimonide d) None of the mentioned	
	ry low pressure termediate range of pressure	b) Very high pressured) All of the mentioned	
	Grou (Short Answer Ty	•	3 x 5=15
3. Briefly4. Define5. Define	different types of orifice plates used for me explain types of level transducers. hysteresis of an instrument. thermal sensor. Classify various temperatures the limitations of capacitive transducer.		(3) (3) (3) (3)
Express	OI the limitations of Inductive transducer.	1	(3)
	Grou (Long Answer Ty		5 x 6=30
7. Explai	n with neat diagram the ferromagnetic plu	nger type inductive sensor.	(5)
8. Draw	and explain piezoelectric transducer.		(5)
9. Explai	n any one of IC type temperature sensor w	ith circuit diagram.	(5)
11. Derive	ate the advantages and disadvantages of the the sensitivity of a Quarter Bridge arrange of Vapour filled thermometers.	ne semiconductor type strain gauge. Ement of a strain gauge load cell.	(5) (5) (5)
Explai	On parallel plate capacitive transducers.	R	(5)