

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FOURTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: AE204

Course Name: SENSORS AND TRANSDUCERS(AE)

Scheme of Valuation/Answer Key

PART A

Answer all questions, each carries 5 marks.

			Marks
1	a	Sensor (2), Transducer (2), classification of transducer; chemical (2), physical (2)	(8)
	b	LVDT description(4), diagrams(3)	(7)
2	a	Electrical resistance Strain gauge(4), Gauge factor(4)	(8)
	b	Active transducer (2), Passive transducer (2),	(4)
	c	Need of secondary Transducer(2), example(1)	(3)
3	a	Example description (4), loading effects (2), diagrams (2)	(8)
	b	capacitive level transducer(4). measurement using differential bridge arrangement.(3)	(7)

PART B

Answer any two full questions, each carries 15 marks.

4	a)	Description of gyroscope in measuring attitude (4), diagrams(2), equation (2)	(8)
	b)	Proving ring type load cell for the measurement of force (2), diagrams(2)	(4)
	c)	working of hydraulic load cell(2), diagrams(1)	(3)
5	b)	Well type manometer-(4) U tube manometer -(4)	(8)
	c)	Explanation of shaft power measurement(4) example(3)	(7)
6	a)	Dead weight Pressure gauge calibrator (4) , diagrams (2), equation (1)	(7)
	b)	Description of microphone for the transduction of sound (3), diagrams (2)	(5)
	c)	filters used with sound level meters.(3)	(3)

PART C

Answer any two full questions, each carries 15 marks.

7	a)	principle of operation of Hall effect transducers(5) applications(3)	(8)
	b)	transfer function for mass damper arrangement. (4)	(4)
	c)	i) Semiconductor sensor(4) ii) Piezo electric sensor -(4)	(8)
8	a)	stroboscopic principle for the measurement of angular speed. (5)	(5)
	b)	working of hot wire anemometers (7) schematics (3)	(10)
	c)	Any proximity sensor (3) diagrams (2).	(5)
9	a)	Orifice plate(5), Pitot tube(5)	(10)

	b)	i) Rotameter (5) ii) Impeller type flow meter(5)	(10)

