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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S2 (R,S) Examinations April 2026 (2024 Scheme)

Course Code: PCMRT205
Course Name: TRANSDUCERS & MEASUREMENTS

Max. Marks: 60 Duration: 2 hours 30 minutes

PART A

(Answer all questions. Each question carries 3 marks)

		CO	Marks
1	Differentiate between active and passive transducers with examples.	CO1	(3)
2	List the different mechanical devices used as primary detectors.	CO1	(3)
3	Explain the working principle of inductive transducers.	CO2	(3)
4	Discuss about shaft encoder. Give any three areas of applications.	CO2	(3)
5	Explain the significances of measurements.	CO3	(3)
6	Explain the terms static error and static correction.	CO3	(3)
7	State the principle of a Wheatstone bridge and write its balanced condition formula.	CO5	(3)
8	Explain the working principle of Cathode Ray Oscilloscope	CO4	(3)

PART B

(Answer any one full question from each module, each question carries 9 marks)

Module -1

9	a)	Describe the principle of working of pressure sensitive primary devices. Explain the working principle of any two types of pressure sensitive primary devices.	CO1	(9)
10	a)	Explain the different classification of electric transducers. List any three advantages of electric transducers.	CO1	(9)

Module -2

11	a)	Explain the working principle of potentiometers and strain gauges. Derive the expression for gauge factor.	CO2	(9)
12	a)	Explain the working principle of capacitive transducers. Describe the displacement measurements by using capacitive transducers.	CO2	(9)

Module -3

13	a)	Explain the main classification of instruments. Distinguish between analog and digital mode of operations of secondary instruments.	CO3	(9)
14	a)	Distinguish between static error and static correction in measurements. Discuss various types of static characteristics of instruments and measuring system.	CO3	(9)

Module -4

15	a)	Explain the terms sources and detectors in AC bridges.	CO5	(4)
	b)	Distinguish between Maxwell's inductance bridge and Maxwell's inductance-capacitance bridge	CO5	(5)
16	a)	Explain the working principle of Digital Storage Oscilloscope with basic block diagram. How measurement is done using Digital Storage Oscilloscope.	CO4	(9)

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