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Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S2 (S) Examination January 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 electrical phenomena that are utilized in the operation of transducers with examples	CO1	(3)
3	Explain the principle used in Hall effect transducers	CO2	(3)
4	Illustrate different calibration techniques in measurement?	CO2	(3)
5	Distinguish between direct and indirect method of measurement, providing one example of each	CO3	(3)
6	Explain the terms linearity and hysteresis	CO3	(3)
7	State one key difference between Wheatstone bridge and kelvins bridge. Why Kelvins bridge is used for the measurement of low resistance?	CO5	(3)
8	Explain the working principle of strip chart recorder	CO4	(3)

PART B

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

Module -1

9	What do you mean by temperature detectors? Explain any two temperature detectors.	CO1	9
10	Explain the different classification of electrical transducers. List any 3 advantages of electrical transducer.	CO1	9

Module -2

11	Explain the working principle of strain gauge. Derive the gauge factor.	CO2	9
12	Describe the operating principle of an LVDT. Explain its characteristics curve and discuss its application in displacement measurement	CO2	9

Module -3

13	Draw the block diagram of generalized measurement system and explain each block in detail	CO3	9
14	Define Static error. Explain in detail classification of errors.	CO3	9

Module -4

15	Compare and contrast AC and DC bridges, highlighting their applications, sources and detectors. Give examples of specific AC bridge types and their uses.	CO5	9
16	Explain the working principle of Cathode Ray Oscilloscope. How measurement is done using Cathode Ray Oscilloscope?	CO4	9

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