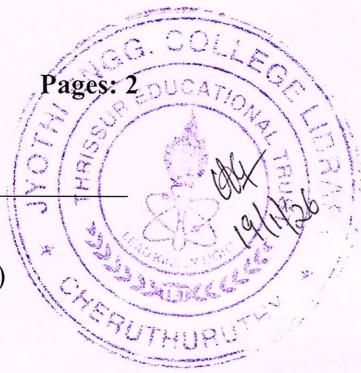


Reg No.: \_\_\_\_\_

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 CO2 9  
curve and discuss its application in displacement measurement

**Module -3**

13 Draw the block diagram of generalized measurement system and explain CO3 9  
each block in detail

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, CO5 9  
sources and detectors. Give examples of specific AC bridge types and their  
uses.

16 Explain the working principle of Cathode Ray Oscilloscope. How CO4 9  
measurement is done using Cathode Ray Oscilloscope?

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