Reg No.: _____ Name : _____

Jyothi Engineering College(Autonomous)

M.Tech Degree S2 (R) Examination, May 2026 (2025 Scheme)

25PIAT241 - COMPUTER AIDED MEASUREMENTS

Total Mark: 60 **Total Time: 2hr 30min**

CO MARK

PART A

Answer All Questions

1. Describe the different types of measuring instruments and their classification. CO2 (5)
2. Explain about the static and dynamic characteristics of sensors. How do these characteristics impact measurement accuracy? CO2 (5)
3. Describe the role of pneumatic, electric, optical, and ultrasonic displacement transducers in measurement system. CO2 (5)
4. Analyze the use of nuclear thermometers for temperature measurement. Discuss their applications in industries that require high-temperature measurements. CO4 (5)
5. Explain the working of a photo-multiplier tube (PMT) as a radiation sensor. CO5 (5)

PART B

Answer Any Five Question(s)

6. Describe the calibration process for pressure gauges and level sensors, highlighting primary and secondary calibration methods. CO5 (7)
7. Discuss the significance of feedback transducer systems in industrial automation. Analyze how these systems improve the precision and reliability of measurement processes. CO4 (7)
8. Compare the working principles of linear displacement and angular displacement transducers. How do they contribute to accurate measurements in industrial automation systems? CO2 (7)
9. Explain how velocity measurement type flow meters work. Discuss their application in industries, including the challenges faced in measuring flow accurately in varying conditions. CO5 (7)
10. Explain the principle of operation of a Hall effect sensor. Discuss how it is used for precise position measurement and current sensing in automation systems. CO5 (7)
11. Explain the concept of an inverse transducer and its applications. How do integrating servos in feedback systems improve automation processes in manufacturing industries? CO5 (7)
12. Discuss the significance of the Reynolds number in flow measurement. Explain how does it influence the selection of flow meters, and what does it indicate about the flow regime? CO3 (7)

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