

Code No.: ME723OE

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**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

IV-B.TECH-I-Semester End Examinations (Regular) - November- 2024

**MEASURING INSTRUMENTS
(Common for CSD, CSC, CSM, IT)**

[Time: 3 Hours]

[Max. Marks: 70]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 20 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A

(20 Marks)

1. a) List any three Methods of measurement. [2M]
- b) Define Precision and Accuracy. [2M]
- c) List the applications of potentiometers. [2M]
- d) What are the applications of sensors? [2M]
- e) Distinguish between Surface roughness and Flatness. [2M]
- f) List different types of accelerometers. [2M]
- g) Classify transducers. [2M]
- h) Define force & pressure. [2M]
- i) List the types of flow meters. [2M]
- j) Define viscosity and write its units. [2M]

PART-B

(50 Marks)

2. Explain the class of standards available for use and calibration process. [10M]
- OR**
3. Explain in detail about different types of errors in measurements. [10M]
4. Explain the construction and working of inductive sensors. [10M]
- OR**
5. Describe the working principle of Resistive Temperature Detector (RTD). [10M]
6. List the types of Accelerometers. Explain any one type of accelerometers in detail. [10M]
- OR**
7. Explain in detail about optical methods for length and displacement measurements. [10M]
8. Explain the working principles of force balance and vibrating cylinder transducers. [10M]
- OR**
9. Illustrate the working principle of gyroscopic force measurement. [10M]
10. With a neat sketch explain the working principle of electromagnetic type flow meter. [10M]
List the advantages and limitations of electromagnetic flow meters.
- OR**
11. Describe in detail about strain gauge load cell method. [10M]
