Code No.: ME723OE | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV–B.TECH–I–Semester End Examinations (Regular) - November- 2023
MEASURING INSTRUMENTS
(Common for CSD, 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) Write a note on international standards. [2M]
   b) List any 3 Methods of measurement. [2M]
   c) State the function of sensors. [2M]
   d) What are the applications of sensors. [2M]
   e) Define a comparator. Discuss the functional requirements of a comparator. [2M]
   f) List different types of accelerometers. [2M]
   g) Define manometer. [2M]
   h) Classify transducers. [2M]
   i) What is the purpose of flow meter. [2M]
   j) Define viscosity and write its units. [2M]

PART-B **(50 Marks)**

2. Explain in detail about different types of errors in measurements. [10M]

OR

3. Explicate the class of standards available for use and calibration process. [10M]

4. Explain the working principle of Resistive Temperature Detector (RTD). [10M]

OR

5. Explain the principle of operation of resistive hygrometers. [10M]

6. How can you measure roughness and angle? Explain in detail. [10M]

OR

7. List the types of Accelerometers. Explain any one type of accelerometers in detail. [10M]

8. With a neat sketch explain the working principle of vibrating wire force transducer. [10M]

OR

9. Illustrate the working principles of force balance and vibrating cylinder transducers. [10M]

10. Illustrate the working principle of two float viscometer. List the advantages and limitations of viscometer. [10M]

OR

11. With a neat sketch explain the working principle of electromagnetic type flow meter. List the advantages and limitations of electromagnetic flow meters. [10M]

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