

CMR ENGINEERING COLLEGE: : HYDERABAD**UGC AUTONOMOUS****IV–B.TECH–I–Semester End Examinations (Supply) - December- 2025****MEASURING INSTRUMENTS****(Common for CSC, CSM)****[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) Classify the errors of measurement. [2M]
- b) List the functional errors of a measuring system. [2M]
- c) What are the advantages of LDRs? [2M]
- d) Justify the statement “resistance is proportional to temperature in RTD”? [2M]
- e) Point the utility of limit gauge and plug gauge. [2M]
- f) What is the principle of magnetic speed pickup? [2M]
- g) List the different types of manometers. [2M]
- h) Write a short note on vibrating wire force transducer. [2M]
- i) List the different types of flowmeters. [2M]
- j) How viscosity is measured? [2M]

PART-B**(50 Marks)**

2. Explain the functional elements of an instrument with a neat block diagram. [10M]
- OR**
3. Describe and explain with an example about various methods of statistical evaluation of measurement data. [10M]

4. Explain the use of wire wound potentiometers for the measurement of linear and rotary motions. [10M]

OR

- 5.a) Write about Capacitive sensor. [5M]
- b) Differentiate between Variable capacitor and differential capacitor. [5M]

6. Describe, with neat sketches, the principle of operation of a (i) column-type air gauge and (ii) pressure-type air gauge. [10M]

OR

- 7.a) What is a gyroscope? Give the applications of it. [5M]
- b) Write about acceleration measuring devices and explain any one of them. [5M]

8. Illustrate about different types load cells with neat diagrams. [10M]

OR

9. Describe the construction and principle of operation of dead weight tester and give its uses. [10M]

10. Write about flow measuring devices. Compare between venturimeter orifice meter and flow nozzles. [10M]

OR

11. Write short notes on Capillary tube viscometer and Sayblot viscometer. [10M]
