

Code No.: ME405PC

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CMR ENGINEERING COLLEGE:: HYDERABAD
UGC AUTONOMOUS
II-B.TECH-II-Semester End Examinations (Supply) - February- 2024
INSTRUMENTATION AND CONTROL SYSTEMS
(MECH)

[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) Define the term Precision and Accuracy. [2M]
- b) List the classification of errors. [2M]
- c) Write the advantages of thermocouples. [2M]
- d) Mention the types of manometers. [2M]
- e) List the different types of level measurement instruments. [2M]
- f) Write a note on mechanical tachometers. [2M]
- g) List various types of stress and strain measurements. [2M]
- h) Classify various types of dynamometers. [2M]
- i) Define Control system. [2M]
- j) Write the classification of control systems. [2M]

PART-B

(50 Marks)

2. Explain the stages of fundamental measuring system with neat schematic diagram for practical applications. [10M]
- OR**
3. Describe the working principle of ionization and photo electric transducers with neat sketches. [10M]
4. Name the material of which thermistors are made and explain the working of thermistors in the act of temperature measurement. [10M]
- OR**
5. Describe with a neat sketch the principle of working of Ionization pressure Gauge. [10M]
6. Discuss in detail about electrical tachometers. [10M]
- OR**
7. How seismic instruments are used for measuring acceleration? Explain in detail. [10M]
8. Explain the function of strain gauge Rosettes. Explain the working of
 - i) Rectangular strain gauge Rosettes,
 - ii) Delta type strain gauge rosettes.[10M]
- OR**
9. Discuss in detail with neat sketch the working principle of torsion meters. [10M]
10. What are the elements of control system? Discuss about open control system with block diagram. [10M]
- OR**
11. Explain the speed control systems with block diagrams and with temperature. [10M]
