

Roll No.

24358

B. Tech. (ME) 6th Sem.

Examination – May, 2015

MEASUREMENT AND INSTRUMENTATION

Paper : ME-310-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 is *compulsory* and attempt any *one* question from each of the *four* Sections. All questions carry equal marks.

1. (a) State the law of intermediate metals in the context of thermo couples.
- (b) Explain the types of control system.
- (c) What is sensor ?
- (d) What do you mean by standards in Mechanical Instrument ?
- (e) What is ramp input signal ? $5 \times 4 = 20$

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SECTION - A

2. Write the short note on the following :

- (a) Zero order, First order and Second order. 10
- (b) Accuracy, Precision, Resolution and Threshold. 10

3. Explain the functional element of a Measurement System and how are you classify the Instrument ? 20

SECTION - B

4. Explain the Construction, Working principle of linear variable Differential Transducer and Piezo electric transducer in detail. 20

5. Write the short note on the following : $2 \times 10 = 20$

- (a) Opto Electrical Transducer.
- (b) Photo conductive Transducer.

SECTION - C

6. (a) Explain the various relative Measuring Device. 10
(b) Explain the elastic force device and Separation of force components. 10

7. Explain the Electro Mechanical Methods with suitable diagram. 20

SECTION - D

8. Write short note on the following : $7 + 7 + 6 = 20$

- (a) Electronic flow meter,
- (b) Electromagnetic flow meter,
- (c) Hot wire Anemometer.

9. Explain the Non-Electrical Methods for temperature measurement in detail. 20