

9. Explain the following :

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- (i) Dynamic effects of connecting tubing.
- (ii) Solid rod thermometer.

Roll No.

24358

B. Tech 6th Semester (ME)

Examination – May, 2016

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*. Students have to attempt *five* questions in total atleast *one* question from each Section.

- 1. (a) Define the standards and calibration. 5
- (b) What is digital encoder ? 5
- (c) What is torque transducer ? 5
- (d) What is the role of selective radiation pyrometer ? 5

SECTION - A

5. Explain the following : 20

- (i) Strain gage bridge circuit.
- (ii) Photo voltaic transducer.

2. (a) What are different classification of instrument ? 10

(b) What are functional elements of a measurement system ? 10

3. Explain the following : 20

(i) Resolution, Threshold, sensitivity, Backlash.

(ii) Response of first and second order system to step, ramp function.

SECTION - B

4. (a) What is linear variable differential transformer ? Explain in detail. 10

(b) What is photo conductive transducer ? Explain in detail. 10

SECTION - C

6. (a) Explain the hydraulic load cell and pneumatic load cell in detail. 10

(b) Explain the hydraulic amplifier in detail. 10

7. Write short note on the following : 20

- (i) Torque transducer.
- (ii) Seismic devices.

SECTION - D

8. (a) What is flow rate meter and variable head meter ? 10

(b) What are different Thermocouple materials ? Also explain the thermo-electric sensors. 10