R10

IV B.Tech I Semester Supplementary Examinations, November - 2016
INSTRUMENTATION
(Open Elective)

Time: 3 hours   **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1 a) Define the following dynamic characteristics of measuring instruments.
      i) Speed of response   ii) Fidelity   iii) Settling time   iv) Dynamic error   [8]
   b) Distinguish between accuracy and precision.   [7]

2 a) Explain pulse code modulation technique with necessary equations.   [8]
   b) Describe different types of test signals used to determine the dynamic
      characteristics of physical systems.   [7]

3 a) What is a transducer? Explain the classification of transducers.   [8]
   b) Derive an expression for gauge factor of a strain gauge.   [7]

4 a) With a neat block diagram explain the microprocessor based ramp type digital
      voltmeter.   [8]
   b) Explain the operation of digital frequency meter with a neat diagram.   [7]

5 a) Explain how phase difference between two sinusoidal signals can be
      measured by using lissajous patterns.   [8]
   b) Describe the different types of delay lines in CRO.   [7]

6 a) Explain with the help of block diagram the operation of heterodyne wave
      analyzer.   [8]
   b) Discuss the applications of spectrum analyzer.   [7]

7 a) Explain the principle and operation of LVDT type accelerometer.   [8]
   b) Distinguish between AC and DC tachometer generators.   [7]

8   Write short notes on the following.
   a) Resistive type liquid level measurement.   [8]
   b) Electromagnetic flow meter.   [7]