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Anna University Exams Nov / Dec 2016 – Regulation 2013
Rejinpaul.com Unique Important Questions – 5th Semester BE/BTECH
EI6502 Industrial Instrumentation I

Unit I

1. Briefly describe the working of different speed measurement methods.
2. With neat sketches explain the working of pneumatic strain gauges.
3. Explain the following methods of measurement of torque: (i) Digital methods (ii) Magneto strictive methods
4. Explain the construction, working of drag cup type tachogenerator. Derive the expression of output from the Drag cup Rotor AC tachogenerator.
5. With neat diagram explain ,the construction and working of (i) Capacitive torque transducer (ii) Stroboscope

Unit II

1. What is a vibrational pick up? Explain the different methods of calibration of it.
2. Explain the working and construction of (i) Pressure head type densitometer (ii) Gas densitometer
3. Explain the following with a neat sketch (i) Float type densitometer (ii) Ultrasonic densitometer
4. Explain in detail about Variable reluctance accelerometer with a neat sketch.
5. Discriminate the seismic instruments as a vibrometer and accelerometer. Justify with your answer.

Unit III

1. With neat sketch describe the method of measurement differential pressure using (i) Resonant pressure sensor (ii) Capacitive differential pressure sensor.
2. Explain the methods of pressure measurement using resistive type pressure transducers.
3. Outline the working of any one type of ionization gauge
4. Discuss about the working principle of Thermal conductivity gauge.
5. With a neat sketch and explain about any two types of Manometers
6. Explain how McLeod gauge and thermal conductivity gauge used for low pressure measurement. Justify this with your answer.

Unit IV

1. Describe the applications of bimetallic thermometer in detail. Mention the merits and demerits of bimetallic thermometer
2. Discuss the features of RTD and explain the working of RTD in 3 wire and 4 wire configurations.
3. Explain about (i) Thermistor and its characteristics. (ii) Different standards and units of temperature scale.
4. Explain in detail the RTD signal conditioning and their characteristics
5. Explain the principle, construction and operation of bimetallic thermometer. Compare bimetallic thermometer and calibration thermometer.

Unit V

1. Explain the signal conditioning circuit for thermocouple.
2. Explain the advantages and disadvantages of optical pyrometer. State its applications.
3. Describe the factors to be considered for the selection of thermocouple. Mention the advantages and disadvantages of thermocouple.
4. Elaborate how the fiber optic temperature measurement is advantageous than other methods.
5. Describe the principle of two color radiation pyrometers.

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