

**R9**

Code: 9A10502

B.TECH III Year I Semester (R09) Supplementary Examinations, May 2012

**INDUSTRIAL INSTRUMENTATION**

(Electronics and Instrumentation Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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- 1 (a) Explain in detail about measurement of area and angle.  
(b) Discuss in detail about optical methods of distance measurement.
- 2 (a) Describe the construction and working of piezoelectric type of accelerometer. Describe the advantages and disadvantages.  
(b) Explain in detail about Gyroscopes.
- 3 (a) Explain in detail about torque measurement using dynamometers.  
(b) Discuss in detail about vibrating wire force transducer.
- 4 (a) Discuss in detail about force balance transducers for measurement of pressure.  
(b) Explain in detail about: (i) Momentum transfer gauges. (ii) Knudsen gauge.
- 5 (a) Explain in detail about ultrasonic flow meter.  
(b) Discuss in detail about LASER Doppler velocity-meter for measurement of flow.
- 6 (a) Explain the theory of radiation pyrometers. Describe the different radiation receiving elements.  
(b) Explain in detail about IC temperature sensors.
- 7 (a) Explain in detail about:  
(i) Capacitive sensors. (ii) conductive sensors for level measurement.  
(b) Discuss in detail about ultrasonic method for level measurement.
- 8 (a) Discuss in detail about sound level meter.  
(b) Discuss in detail about phase-angle measurement.

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