

Code: R7410304**R07**

IV B.Tech I Semester (R07) Supplementary Examinations, May 2012

INTRUMENTATION & CONTROL SYSTEMS

(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Give generalized block diagram of measuring instrument and describe it with example.
(b) What is error? Classify errors and explain why they occur and how to eliminate them.
2. (a) What is LVDT? Give construction and operation of it with neat figure.
(b) Discuss about optical pyrometer with neat sketch.
3. (a) List different types of manometers and discuss any two types.
(b) Describe working of McLeod gauge with neat sketch.
4. (a) Discuss about capacitive transducer based level measurement.
(b) Give an account of ultrasonic method of flow measurement.
5. (a) Explain stroboscopic method of speed measurement.
(b) List various types of accelerometers and discuss any two with neat diagrams.
6. (a) Define gauge factor of a strain gauge. Derive an expression for gauge factor.
(b) Discuss about tensile and compressive strain measurement using strain gauge.
7. (a) What is dew point? Give an account of dew point measurement.
(b) Elaborate on dynamometers.
8. (a) Compare open loop and closed loop control systems with examples.
(b) Describe position control system.
