

R09**Code: 9A03704**

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

INSTRUMENTATION & CONTROL SYSTEMS

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) List out various measurement methods and explain them.
(b) Draw the block diagram of a generalized measurement system and explain its various elements.
- 2 (a) What are transducers and how are they classified?
(b) Define seebeck effect and peltier effect.
- 3 (a) Describe, with neat sketch any one method of low pressure measurement.
(b) Briefly explain the operation of Bourdon's pressure gauge with neat diagram.
- 4 (a) Explain the principle of operation of hot wire anemometer.
(b) What are bubbler level indicators? Describe their working.
- 5 (a) Give the classification of mechanical tachometers.
(b) What do you understand by vibrometer and accelerometer?
- 6 (a) Describe the working principle of unbounded strain gauge with a diagram.
(b) Explain the procedure to measure strain due to bending, using strain gauges.
- 7 (a) Explain the working principle of a sling psychrometer for measurement of Humidity with a neat sketch.
(b) Write a note on load cells.
- 8 What is the importance of control systems? Explain about classification of control systems.
