

Code No: 09A70304

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2013

Instrumentation and Control Systems

(Common to ME, AME)

Time: 3 Hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) State and explain the basic principles of measurements.
- b) Explain about the working of various elements of general measurement system of bourdon tube pressure gauge as an example with a neat sketch. [7+8]
- 2.a) Explain the working principle and advantages of capacitive transducers.
- b) Explain the filament type of optical pyrometer with a neat diagram. [7+8]
- 3.a) Explain the working principle of diaphragm gauge with a neat diagram.
- b) State the advantages and disadvantages of above gauge. [7+8]
- 4.a) Compare various indirect liquid level measuring methods.
- b) Explain the construction and working principle of Laser Doppler Anemometer (LDA) with a neat diagram. [7+8]
5. Explain the construction and working principle of stroboscope. State its advantages and limitations. [15]
6. What is meant by strain gauge rosette? Explain the features of various types of rosettes. [15]
- 7.a) Define the terms
i) Humidity ratio ii) Dry bulb temperature iii) Relative humidity.
- b) List out various types of electrical hygrometers for measuring the relative humidity. Explain atleast one in detail with a neat diagram. [7+8]
- 8.a) State the advantages and limitations of closed-loop control system.
- b) Draw and explain block diagram for temperature control system. [7+8]

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