

End Semester Examinations - 2015-16 Even Semester - May 2016

14EI2008 Industrial Instrumentation

Set A

Time : 3 hrs
Total Marks: 100

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1. a. Explain the working principle of Mcleod gage with a neat diagram also give the output equation for the applied low pressure.(10 Marks)
 b. With neat sketch explain the operating principle of dead weight tester. (10 Marks)

OR

2. a. Give the relation between displacement and pressure.How is pressure measured using diaphragms? (10 Marks)

 b. Describe ionization gauge. How does it differ from the pirani gauge? Discuss its merits and demerits.(10 Marks)
3. a. Describe in detail the principle of operation of vortex type flow meter with neat sketches. (10 Marks)

 b. Explain the flow measurement by orifice plate with the help of a sketch giving the installation details.(10 Marks)

OR

4. a. Explain the principle and operations of an electromagnetic flow meter. Discuss its merits.(10 Marks)

 b. Describe with neat sketches, the construction and working of a rotameter. (10 Marks)
5. a. What are the various types of filled type thermometers? Explain in detail the working of ANY ONE of them.(10 Marks)

 b. Explain with neat sketches, the working, construction, advantages and disadvantages of a thermistor.(10 Marks)

OR

6. a. With the neat sketch explain the operation of optical pyrometer. (10 Marks)
 b. Explain the theory and construction of bimetallic thermometer. (10 Marks)
7. a. Describe any method of liquid level measurement for measuring the level of a corrosive liquid. (15 Marks)

 b. Determine the height of the liquid column in a closed tank. The hydrostatic pressure is given as 1.6 kg/cm^2 and the external pressure on liquid in the tank is 0.5 kg/cm^2 . Assume density of water is 1000 kg/m^3 .(5 Marks)

OR

8. a. Explain the principle and operation of capacitance level indicator with neat sketches.(10 Marks)

 b. Explain the principle and operations of ultrasonic level detector. Discuss its merits and demerits(10 Marks)
9. a. Explain the density measurement by vibrational methods with the help of a sketch giving the installation details.(10 Marks)

 b. Describe in detail the working principle, advantages and disadvantages of capillary viscometer. (10 Marks)