

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

---

**14CE3008 Experimental Techniques and Instrumentation**

**Set A**

**Time : 3 hrs**  
**Total Marks: 100**

---

1. Explain the working principle of (i) Linear (LVDT) (ii) angular displacement and (iii) dial indicator devices and their applications with neat sketches  

**OR**
  2. a. Detail the characteristics of strain gauges. (5)  
b. Discuss the electrical strain gauges that are used in the experiments with neat sketches. (15)
  3. Explain the working principle of (i) Tuckerman's gauge and (ii) Tinius olsen extensometer  

**OR**
  4. Explain the construction and working principles of (i) Proving ring (ii) Pressductor (iii) Hydraulic load cell (iv) column type load cell.
  5. Explain the working principle of cathode ray oscilloscope with neat sketches.  

**OR**
  6. Discuss the Bourdon's pressure gauge and its calibration method.
  7. a. Elaborate the characteristics of vibrations. (8)  
b. Discuss the shock table test and the modifications made in it with neat sketches. (12)  

**OR**
  8. Explain in detail the testing arrangement and procedure required for concrete beam tests with neat sketches indicating the location of various instruments on the beam.
  9. Discuss any 3 NDT test to determine the strength of the structure / concrete with neat sketches.
- 

**Wishing you All the Best**

---