

Code No: R05311002

**Set No. 4**

**III B.Tech I Semester Regular Examinations, November 2008**  
**INDUSTRIAL INSTRUMENTATION**  
**(Electronics & Instrumentation Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. What are the methods of measuring small bore diameter? Explain with neat sketches? [16]
2. (a) Discuss the methods of measuring linear velocity.  
(b) What are mechanical revolution counters and timers? Explain how these counters are used to measure shaft speed? [6+10]
3. (a) Explain in detail the principle and operation of torque measurement by using an electrical method with a neat sketch.  
(b) Explain the measurement of force using LVDT transducer. [8+8]
4. What is vacuum gauge? What are the different types of vacuum gauges? Explain. [16]
5. Explain the characteristics, measuring techniques and measurement methods of flow. [16]
6. Explain one method used for measurement of liquid density. [16]
7. Explain which instrument can be used to measure temperatures where peak radiation emission is in red part of visible spectrum. [16]
8. Classify the Electrical Resonance Type Frequency meters and explain them. [16]

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