

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-V • EXAMINATION – SUMMER • 2015**

**Subject Code: 151701****Date: 05/05/2015****Subject Name: Industrial Measurement****Time: 02.30pm-05.00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain the concept of Temperature and Heat. Classify various methods of Temperature measurement based on the application of measurement. **07**  
(b) What is RTD? Explain working principle and signal conditioning for RTD. **07**
- Q.2** (a) What is Pyrometer? Explain construction and working of Pyrometer. **07**  
(b) Classify various types of Thermocouples in detail and explain the working principles of thermocouple. **07**
- OR**
- (b) Draw and explain C- type Bourdon pressure gauge and its calibration method. **07**
- Q.3** (a) Explain the following terms. 1) Absolute Pressure 2) Gauge Pressure 3) Vacuum. And also explain the method of vacuum measurement. **07**  
(b) List out electrical methods of pressure measurement and explain any one in detail. **07**
- OR**
- Q.3** (a) What is Flow? Explain the concept of Reynolds number and classify various methods of Flow measurement based on application. **07**  
(b) Draw and explain Ultrasonic Flowmeter in detail. **07**
- Q.4** (a) Explain construction and working of Electromagnetic Flow meter. **07**  
(b) What is differential pressure? Explain DP transmitter and its applications. **07**
- OR**
- Q.4** (a) Explain Capacitance type level measurement technique in detail. **07**  
(b) Explain Optical type level measurement technique in detail. **07**
- Q.5** (a) Explain the concept of mass flow and volumetric flow with any one type of measurement technique for either of this types. **07**  
(b) With suitable diagram explain Level switch and its applications. **07**
- OR**
- Q.5** (a) What is Strain Gauge? Explain its working and its applications. **07**  
(b) What is Manometer? Explain various types of it in detail. **07**

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