

GUJARAT TECHNOLOGICAL UNIVERSITY**BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 152402****Date: 12-01-2013****Subject Name: Electrical Measurements and Electronics Instruments****Time: 02:30 pm to 05:00 pm****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) Enumerate the main static characteristics of measuring instruments. **07**
(b) Explain the classification of Electrical and Electronics Instruments. **07**
- Q.2** (a) List the essential parts of Indicating Instruments and Explain the difference between Spring Control and Gravity Control. **07**
(b) Explain construction, principle and operation of D'Arsonval Galvanometer. Derive torque equation for it. **07**
- OR**
- (b) Explain construction, principle and operation of Vibration Galvanometer. Derive torque equation for it. **07**
- Q.3** (a) With neat diagram explain construction and operation of single phase energy meter. **07**
(b) Explain the construction and characteristics of PT with its equivalent circuit and necessary phasor diagram. **07**
- OR**
- Q.3** (a) With neat sketch explain construction and working of dynamometer type 1- Φ Power Factor Meter. **07**
(b) Explain the construction and characteristics of CT with its equivalent circuit and necessary phasor diagram. **07**
- Q.4** (a) Explain the classification of resistance. List the methods for measurement of low resistance. Explain Kelvin Double Bridge using circuit diagram and necessary equation. **07**
(b) Explain De Sauty Bridge using necessary circuit diagram, phasor diagram and equation. **07**
- OR**
- Q.4** (a) Explain the classification of resistance. List the methods for measurement of high resistance. Explain Loss of charge method using circuit diagram and necessary equation. **07**
(b) Explain Maxwell Bridge using necessary circuit diagram, phasor diagram and equation. **07**
- Q.5** (a) Define Probe. List the types of Probes and explain the construction and features of Active probe. **07**
(b) Give the classification of Digital Voltmeter. Explain Dual-slope Integrating type DVM with necessary block diagram. **07**
- OR**
- Q.5** (a) List different accessories used with measuring instruments. Explain construction and features of RF demodulator probes. **07**
(b) Define Q factor of Inductor. Explain the working of Digital LCR Meter with neat Block diagram. **07**
