

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III • EXAMINATION – WINTER 2013

Subject Code: 130903**Date: 26-11-2013****Subject Name: Electrical and Electronics Measuring Instruments****Time: 02.30 pm - 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) Discuss the measurement of absolute resistance with neat sketch. **07**
(b) Derive the dimension of the following quantities using fundamental units of L M T I system : (i) E.M.F. (ii) Magnetic flux density (iii) Permittivity. **07**

- Q.2** (a) Explain construction and working of PMMC instruments. **07**
(b) Explain various operating forces (torques) of analog instruments. **07**

OR

- (b) Explain extension of range of voltmeter and ammeter. **07**
- Q.3** (a) What is galvanometer? Sketch and explain the construction and working of ballistic galvanometer. **07**
(b) Explain lag adjustment, friction compensation and creep regarding to single phase watt-hour meter. **07**

OR

- Q.3** (a) Define the terms 'current sensitivity', 'voltage sensitivity' and 'Megohm sensitivity' as applied to d'Arsonval galvanometers. **07**
(b) Explain measurement of reactive power by one wattmeter. **07**
- Q.4** (a) Draw and explain the working of Merz Price maximum demand indicator. **07**
(b) Explain which factors should be considered while selecting an analog voltmeter. **07**

OR

- Q.4** (a) Explain how power can be measured in a 3- ph circuit with the help of one wattmeter **07**
(b) Explain electronic ohmmeter. **07**
- Q.5** (a) Draw the circuit diagram of a Crompton's potentiometer and explain its working. **07**
(b) Explain trivectormeter **07**

OR

- Q.5** (a) Differentiate AC and DC potentiometers. **07**
(b) Write a short note on Weston frequency meter. **07**
