

GUJARAT TECHNOLOGICAL UNIVERSITY**B. E. - SEMESTER – III • EXAMINATION – WINTER 2012****Subject code: 130903****Date: 03-01-2013****Subject Name: Electrical and Electronics measuring Instruments****Time: 10.30 am – 01.00 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) Explain Lorenz method for absolute measurement of resistance. **05**
(b) What is standard? Explain secondary resistance standard **05**
(c) Define (i) Accuracy (ii) Precession (iii) Drift (iv) Resolution. **04**
- Q.2** (a) Explain construction and working of PMMC instruments. **07**
(b) Differentiate between Spring control and Gravity control methods used to produce the controlling torque. **07**
- OR**
- (b) Explain various methods of providing damping torque in an indicating instruments **07**
- Q.3** (a) Explain the construction of D'Arsonval galvanometer. **07**
(b) Explain how two wattmeters are used to measure power of a 3-phase balanced load **07**
- OR**
- Q.3** (a) Explain different motions in D'Arsonval galvanometer. **07**
(b) Explain construction and working principle of operation of induction type wattmeter **07**
- Q.4** (a) Derive the torque equation for induction type single phase energy meter. **07**
(b) What are the advantages of electronic voltmeter over the other voltmeter? **07**
- OR**
- Q.4** (a) Explain Merz price maximum demand indicator. **07**
(b) What are the considerations required to be taken into account while selecting an electronic voltmeter. **07**
- Q.5** (a) Explain working principle of Slide wire D.C. potentiometer. Also explain how it is standardized. **07**
(b) Write a short note on single phase electrodynamicometer type power factor meter. **07**
- OR**
- Q.5** (a) Explain working of Drysdale-Tinsley polar type a.c. potentiometer. **07**
(b) Write a short note on Synchroscope. **07**
