

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III EXAMINATION – WINTER 2015

Subject Code:130903

Date:18/12/2015

Subject Name: Electrical and Electronics Measuring Instruments

Time: 2:30pm to 5:00pm

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) State and explain different types of Voltage standards. **07**
(b) Explain with suitable example 1) Accuracy 2) Precision 3) Sensitivity **07**
4) Resolution

- Q.2** (a) What is Low, Medium and High resistance? State different methods for the **07**
measurement of High resistance Explain any one in details.
(b) Explain different types of effects used to produce operating torque in measuring **07**
instruments.

OR

- (b) Explain construction working of D'Arsonval galvanometer. Also derive its **07**
torque equation.
- Q.3** (a) Explain construction and working of PMMC instruments. Also states its **07**
advantages and disadvantages.
(b) Why scale of a moving iron instruments is non uniform? Also give comparison **07**
between Moving coil and Moving Iron instruments.

OR

- Q.3** (a) Explain different types of methods to produce Damping torque. **07**
(b) Explain construction and working of Electrodynamometer type instrument. **07**
- Q.4** (a) Using expression for torque in single phase induction type meters, Show that the **07**
total no of revolutions made by its disc during a particular time is proportional
to the energy consumed.
(b) Explain construction and working of Single phase Induction type watt hour **07**
meter.

OR

- Q.4** (a) Explain the circuit diagram and operation of an Electronic Voltmeter using **07**
a differential amplifier.
(b) Explain measurement of power in three phase circuit. **07**
- Q.5** (a) What are the various types of errors encountered in electrical measurements? **07**
Explain in detail.
(b) Explain the principle of operation of an electrostatic instrument. **07**

OR

- Q.5** (a) Explain resistance standards. **07**
(b) Explain the various factors which are taken in to consideration while selecting **07**
an electronic type analog voltmeter.
