

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

P.D.D.C. Sem- II Remedial Examination Nov / Dec. 2010

Subject code: X20902

Subject Name: Electrical Measurement I & II

Date: 30 / 11/ 2010

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 Absolute measurement of current. **07**
(b) Define following terms: (i) Sensitivity (ii) Precision (iii) Drift (iv) Hysteresis **07**

- Q.2** (a) Explain various effects with which deflecting torque is produced? **07**
(b) Explain construction and working of attraction type moving iron instrument. **07**

OR

- (b) Explain difference between Gravity control and Spring control. **07**
Q.3 (a) Explain construction and working of a DC potentiometer. **07**
(b) A moving coil instrument gives a full scale deflection for a current of 10 mA with a potential different of 100 mV across it. Calculate (i) shunt required to use it as an ammeter to get a range of 0 – 100 A (ii) Multiplier required to use it as a voltmeter of range 0 – 500 V. **07**

OR

- Q.3** (a) Explain how the current range of a PMMC instrument can be extended? Also derive equation for shunt. **07**
(b) Explain Drysdale-Tinsley polar type AC potentiometer. **07**
Q.4 (a) Construction and working of D'Arsonval galvanometer. **07**
(b) State the different methods of measuring medium resistances. Explain any one method in brief. **07**

OR

- Q.4** (a) What do you understand by Low, Medium and High resistance? Describe Kelvin's double bridge method for measurement of small resistance. **07**
(b) Construction and working of a Single phase energy meter. **07**
Q.5 (a) Explain construction and working of Anderson bridge. **07**
(b) Construction and working of resonance type frequency meter **07**

OR

- Q.5** (a) Explain construction and working of a basic electronic voltmeter. **07**
(b) Explain construction and working of Maxwell bridge. **07**
