Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER–II EXAMINATION – SUMMER 2016

Subject Code:X20902 **Date:02/06/2016**

Subject Name:ELECTRICAL MEASUREMENT I & II

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe the working of Hay's bridge for measurement of Inductance. Derive equation for balance and draw the phasor diagram of bridge under balance conditions.	**07**
	(b)	Define following terms (i) Sensitivity (ii) Precision(iii) Hysteresis (iv) Drift	**07**
Q.2	**(a)**	Explain various effects with which deflecting torque is produced?	**07**
	(b)	Derive the dimensions of the following quantities in L,M,T,I units: 1. Potential Gradient 2. Capacitance 3. Magnetic Flux Density	**07**
Q.3	**(a)**	Explain how the current range of a PMMC instrument can be extended? Also derive equation for shunt.	**07**
	(b)	Which are the different methods of power measurement in 1-ph and 3-ph systems.	**07**
Q.4	**(a)**	Draw the circuit diagram of Schering bridge and derive expression for C and tanδ at balance for dielectric under test.	**07**
	(b)	Construction and working of D'Arsonval galvanometer.	**07**
Q.5	**(a)**	Explain construction and working of Anderson bridge.	**07**
	(b)	Explain working of digital LCR meter.	**07**
Q.6	**(a)**	Explain Gall Tinsley type A.C. Potentiometer	**07**
	(b)	Describe different methods of damping with measuring instruments	**07**
Q.7	**(a)**	Explain Tri vector meter with a neat diagram.	**07**
	(b)	With neat sketch explain the two-wattmeter method of power measurement	**07**

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