Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III • EXAMINATION - WINTER • 2014

Subject Code: 130903 Date: 18-12-2014 Subject Name: Electrical and Electronics Measuring Instruments Time: 02.30 pm - 05.00 pm Total Marks: 70			
Ins	2.	ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a) (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) Resistance. Describe the construction and working of PMMC instrument.	07 07
Q.2	(a)	Define & explain the following terms: (1) Accuracy (2) precision (3) sensitivity.	07
	(b)	Describe the construction and working of an electrodynamometer type instrument?	07
	(b)	OR Describe the constructional detail of an attraction type moving iron instrument with help of diagram. Derive the equation for defection if spring control is used.	07
Q.3	(a) (b)	Describe with a circuit diagram operation of an electronic voltmeter used in differential amplifier Explain with a neat diagram working of a Synchroscope	07 07
Q.3	(a) (b)	OR Explain extension of range of voltmeter and ammeter What is galvanometer? Sketch and explain the construction and working of ballistic galvanometer.	07 07
Q.4	(a) (b)	Draw and explain the working of Merz Price maximum demand indicator Explain measurement of active power by one wattmeter method with necessary diagrams	07 07
Q.4	(a) (b)	OR Explain measurement of reactive power by Two wattmeter method with necessary diagrams Explain working of hot-wire instruments. Also state advantages and	07 07
O 5	, ,	disadvantages of hot-wire instruments.	07
Q.5	(a) (b)	Write a short note on Weston frequency meter. Describe the constructional detail of single phase induction type energy meter. OR	07
Q.5	(a) (b)	Discuss sources of error in single phase induction type energy meter. Write a short note on digital tachometer	07 07
