Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject Code: 2141003 **Date:30/05/2015**

Subject Name: Electronics Measurement & Instrumentation

Time: 10:30am-1.00pm **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)	Define and explain the following static characteristics of an instrument. 1) Accuracy 2) Linearity 3) Stability 4) Resolution	07
	(b)	Write a short note on DSO.	07
Q.2	(a)	(i) Find the equivalent parallel Resistance and Capacitance that causes a Wein Bridge to null with following component values. R1 =3.1KΩ , C2 = 5.2μF , R2 = 25KΩ, f = 2.5KHz, R4 = 100KΩ. (ii) Compare AC and DC Bridges.	04 03
	(b)	Differentiate between primary and secondary transducers with the help of suitable examples.	07
		OR	
	(b)	Explain Gating Error, Time Base Error and Trigger Level Error.	07
Q.3	(a)	With neat diagram explain the various parts of CRT.	07
	(b)	What is Data Acquisition? What are the basic objectives of DAS?	07
		OR	
Q.3	(a)	Explain basic principle of oscillation .What is Barkhausen Criterion?	07
	(b)	Explain different types of potentiometer and list advantages and disadvantages of potentiometer transducer.	07
Q.4	(a)	Write a note on lock-in amplifier.	07
	(b)	Describe A.F. sine and square wave generator with suitable diagram and working.	07
		OR	
Q.4	(a)	What is wide band sweep generator? What are its basic elements and explain its working with a block diagram.	07
	(b)	Write short note on wave analyzer.	07
Q.5	(a)	Explain the generalized block Schematic of Digital Data Acquisition System and list out its advantages over Analog Data Acquisition System.	07
	(b)	What is LVDT? Write its merits and demerits .Discuss its two applications.	07
		OR	
Q.5	(a)	What is optical isolator? Write its characteristics and advantages.	07
	(b)	Draw and Explain the block diagram of Digital Frequency Meter.	07