Enrollment No:	Exam Seat No:
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## **C.U.SHAH UNIVERSITY**

## **Summer Examination-2019**

**Subject Name :Basic Instrumentation Skills** 

Subject Code: 4SC06BIS1 Branch: B.Sc. (Physics)

Semester: 6 Date: 02/05/2019 Time: 10:30 To 01:30 Marks: 70

## **Instructions:**

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1		Attempt the following questions:	(14)
	a)	Give full form of CRT and CRO.	01
	<b>b</b> )	Define distortion meter.	01
	c)	What is a sensitivity?	01
	d)	What is the main function of a CRT?	01
	e)	What is an accuracy of instrument?	01
	f)	Write merits and demerits of multimeter.	01
	g)	Define: Measurements error.	01
	h)	Write applications of distortion meter.	01
	i)	How temperature is affected in the accuracy of digital multimeter?	01
	j)	Give applications of digital storage oscilloscope.	01
	k)	State uses of CRO.	01
	l)	What is meant by resolution?	01
	m)	What is an arbitrary wave form generator?	01
	n)	Define errors. How many types of it?	01
Attempt	any f	our questions from Q-2 to Q-8	
Q-2		Attempt all questions	(14)
	a)	Explain environmental error, observational error and instrumental error in detail.	07
	b)	What is an electronic voltmeter Explain its working with neat and clean block diagram. Write its applications.	07
Q-3		Attempt all questions	(14)
	a)	What do you mean by multimeter? Write applications of multimeter as an ammeter.	07
	b)	Draw the block diagram of CRT and discuss its working in detail.	07
Q-4		Attempt all questions	(14)
	a)	Explain CRO in brief with neat and clean diagram.	07
	b)	What do you mean by digital storage oscilloscope? Discuss its principle with	07



## block diagram.

Q-5		Attempt all questions	(14)
	a)	Define signal generator. Write names of different types of signal generators. Draw block diagram of standard signal generator. State its applications.	07
	<b>b</b> )	What is Q-meter? Draw block diagram of Q-meter. Explain working principle of Q-meter.	07
Q-6		Attempt all questions	(14)
	a)	Write short notes on (1) function generator and (2) RF and microwave generator.	07
	<b>b</b> )	Write short notes on digital multimeter works as a digital ammeter.	07
Q-7		Attempt all questions	(14)
	a)	Write short notes on digital multimeter works as a digital voltmeter.	07
	<b>b</b> )	Why LCR meter is used for? Explain bridge method for LCR meter.	07
Q-8		Attempt all questions	(14)
	a)	Differentiate analog and digital instruments.	05
	b)	How can we use multimeter as an ammeter? Explain its working.	05
	c)	Derive the formula for total harmonic distortion.	04