

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- IV EXAMINATION – SUMMER 2020****Subject Code: 2141704****Date: 27/10/2020****Subject Name: MEASUREMENT & INSTRUMENTS****Time: 10:30 AM TO 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.

		MARKS
Q.1	(a) Differentiate recording VS integrating instruments	03
	(b) Draw and describe basic circuit of analog indication instruments and digital indication instruments.	04
	(c) What is loading effect? How it will eliminates from real measurement? Shortly describe it.	07
Q.2	(a) How TRUE RMS meter works? Describe it in brief.	03
	(b) List the step to obtain lissajous patterns on CRO	04
	(c) Explain the operation of Digital to Analog conversion of measured electrical quantity.	07
	OR	
	(c) Explain the operation of Analog to Digital conversion of measured electrical quantity.	07
Q.3	(a) Describe the function of Cathode Ray Tube with neat diagram.	03
	(b) Illustrate the working of attenuation CRO probe.	04
	(c) Draw and describe Digital Storage Oscilloscope in details.	07
	OR	
Q.3	(a) How does power scope differ than DSO? Brief it.	03
	(b) How do you measure unknown frequency using CRO? Describe its procedure with final calculation	04
	(c) Give explanation why we carried out harmonic frequency analysis? Describe one of the method for it.	07
Q.4	(a) What are the resistive components in Electrical DC and AC circuit? Give suitable explanation.	03
	(b) Draw and describe Kelvin double bridge. List its limitation.	04
	(c) Describe with neat sketch electrodynamics single phase watt meter.	07
	OR	
Q.4	(a) Describe the color code which used to identify capacitor.	03
	(b) Which bridges are used to measure unknown inductance? Describe one with its circuit diagram.	04
	(c) Draw and describe Schering bridge circuit to find cable fault in dtails.	07
Q.5	(a) What is Q-factor? Define it.	03

- (b) Illustrate contraction, working and application of Current transformer **04**
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- (c) Draw and describe working, schematic and application of function generator in detail **07**

OR

- Q.5** (a) How do you measure power factor? Describe it. **03**
- (b) Illustrate contraction, working and application of Potential Transformer **04**
- (c) Draw and describe working, schematic and application of sine wave Oscillator in detail **07**

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