

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER- III EXAMINATION – SUMMER 2020****Subject Code: 3131706****Date: 28/10/2020****Subject Name: Measurement and Instruments****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

		MARKS
<b>Q.1</b>	(a) Differentiate between indicating and recording instruments with examples.	<b>03</b>
	(b) Explain the loading effect in meters	<b>04</b>
	(c) What is full form of 'PMMC'? Discuss working of PMMC meter with diagram	<b>07</b>
<b>Q.2</b>	(a) How Voltmeter- Ammeter method can be used to measure unknown resistance? Explain in detail.	<b>03</b>
	(b) Explain sweep frequency generator in brief.	<b>04</b>
	(c) Explain Wien Bridge to find out unknown frequency.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(c) Explain Kelvin double bridge method to find out low resistance.	<b>07</b>
	(a) Draw RS-232 pin diagram	<b>03</b>
	(b) Explain 'Potential transformers' with applications.	<b>04</b>
	(c) Draw and explain block diagram of Digital Multi-meter.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Give the differences between current transformer and potential transformer	<b>03</b>
	(b) Explain 7 segment display in short.	<b>04</b>
	(c) Draw and explain basic block diagram of CRO.	<b>07</b>
<b>Q.4</b>	(a) Explain function generator with block diagram.	<b>03</b>
	(b) Explain different types of measurement error.	<b>04</b>
	(c) Explain capacitive interference, inductive interference and shielding.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Explain power measurement in single phase.	<b>03</b>
	(b) Explain any one method of frequency measurement in short	<b>04</b>
	(c) How Whetstone bridge can be used to find out unknown resistance. Explain with circuit diagram.	<b>07</b>
<b>Q.5</b>	(a) Write a short note on LCD.	<b>03</b>
	(b) What is a Lissajous pattern in oscilloscope? Explain its applications	<b>04</b>
	(c) Write short note on vertical deflection sub-system of oscilloscope.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Explain in short pulse generator	<b>03</b>
	(b) Explain Hay's bridge.	<b>04</b>
	(c) What is current transformer? Explain its working with construction diagram.	<b>07</b>

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