

Subject Code: 3131706

Date: 30/11/2019

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
Q.1	(a) Demonstrate Indicating type instruments.	03
	(b) Compare: Accuracy and Precision with example.	04
	(c) Explain Loading effect and its elimination in AC and DC Meters.	07
Q.2	(a) What is transformer? Write down types and application of transformers.	03
	(b) Explain frequency measurement using Zero beat frequency meter.	04
	(c) Explain working principle of PMMC meter in detail with its neat diagram.	07
OR		
	(c) Explain Digital multimeter with its block diagram.	07
Q.3	(a) Explain RS 232C Standards in brief	03
	(b) Obtain Lissajous pattern using CRO in X-Y mode for frequency measurement of 2:1, 3:1, 3:2 & 4:1 with its procedure & Waveform.	04
	(c) Explain block diagram of CRO with function of each block in details.	07
OR		
Q.3	(a) Identify different techniques for measurement of medium resistance. Explain any one in detail.	03
	(b) Find resistance values for Ayrton shunt to provide an ammeter with current ranges of 1 A, 5 A and 10 A. A basic PMMC meter with an internal resistance of 50 Ohm and a full scale deflection current of 1 mA is to be used	04
	(c) Explain Kelvin double bridge for low resistance measurement with neat diagram	07
Q.4	(a) Explain Electronic Timers.	03
	(b) Explain Hay's bridge method to measure unknown Inductance.	04
	(c) Explain Schering bridge method to measure unknown capacitance with its circuit diagram and calculations.	07
OR		
Q.4	(a) Explain Distortion Analyzer with example.	03
	(b) Explain Sweep frequency generator.	04
	(c) Explain Universal Timer-Counter with its block diagram.	07
Q.5	(a) Explain Conductive coupling interference with example.	03
	(b) What is Inductive Interference? Explain How it can be reduced.	04
	(c) What is Current transformer? Explain its working with construction diagram.	07
OR		
Q.5	(a) Explain Ground level interference in brief.	03
	(b) Explain Power factor measurement using Analog meter.	04
	(c) Explain 3 – Phase Power measurement using 2 watt meter method with necessary diagrams.	07
