Hall Ticket No	Q	uestion Paper Code: AEC014
	NSTITUTE OF AERONAUTICAL ENGINE (Autonomous)	ERING
BERT OF FOR LINE	B.Tech VI Semester End Examinations (Regular), November Regulation: IARE–R16	- 2020
ELI Time: 2 Hours	ECTRONIC MEASUREMENT AND INSTRUM (ECE)	ENTATION Max Marks: 70
	Answer any Four Questions from Part A Answer any Five Questions from Part B	
	$\mathbf{PART} - \mathbf{A}$	

1.	Explain in detail about different types of errors in measurement systems.	[5M]
2.	Compare dual beam CRO and dual trace CRO.	[5M]
3.	How can a sine and square wave be generated using signal generator?	[5M]
4.	What are the conditions for bridge balance?	[5M]
5.	List and explain the salient features of semiconductor strain gauges.	[5M]
6.	Explain with diagram, how a multimeter can be used as voltmeter and ammeter.	[5M]
7.	Describe how stray capacitances can be eliminated using Wagner's ground connection with diagram.	[5M]
8.	What are the different methods for measurement of liquid level?	[5M]

## $\mathbf{PART} - \mathbf{B}$

9.	A D'Arsonval movement with a full scale deflection current of 50 A and internal resistance of $500\Omega$ is converted into a multirange voltmeter. Determine the values of individual resistors required for 0-20V, and 0-100V.	s to be 0-50V [ <b>10M</b> ]
10.	With a neat diagram, Illustrate the basic principle of a successive approximation type digital volt meter.	[10M]
11.	Draw the basic block diagram of CRO and dual trace CRO and state the functions of each block.	[10M]
12.	The deflection sensitivity of a CRT is 0.05mm/V and an unknown voltage is applied to the horizontal deplate, which shifts the spot by 5mm towards the right. Determine the unknown applied voltage.	flection $[10M]$
13.	Explain with help of a block diagram the working principle of a spectrum analyzer	[10M]
14.	Describe the functioning of standard signal generator.	[10M]
15.	Draw the Maxwell's bridge circuit and derives the expression for the unknown element at balance?	[10M]
16.	A Maxwell bridge is used to measure inductance inductive impedance. The bridge constants at balance $C_1 = 0.01 \mu$ F, $R_1 = 470$ K $\Omega$ , $R_2 = 5.1$ K $\Omega$ , $R_3 = 100$ K $\Omega$ . Find the series equivalent of the unknown impedance.	are [ <b>10M</b> ]
17.	Explain the method of measuring displacement using LVDT with the help of diagram.	[10M]
18.	List various types of thermocouples and illustrate the working principle of thermocouple.	[10M]

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