Code No: P18EET07

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
III B.TECH I SEMESTER END REGULAR EXAMINATIONS, DEC/JAN – 2022/23
ELECTRICAL MEASUREMENTS AND INSTRUMENTATION
(EEE Branch)

Time: 3 hours   Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer all the questions in Part-A (5X2=10M)

Q. No.		Questions	Marks	CO	KL
1.	a)	Enlist the advantages of PMMC Instrument.	[2M]	1	2
	b)	What do you mean by phantom loading?	[2M]	2	1
	c)	What is Ballastic galvanometer?	[2M]	3	1
	d)	Draw the Maxwell's bridge for inductance measurement.	[2M]	4	1
	e)	What is LVDT? Write its applications.	[2M]	3	1

PART-B

Answer One Question from each UNIT (5X10=50M)

Q. No.		Questions	Marks	CO	KL
		UNIT-I			
2.	a)	Explain how the range of ammeters and voltmeters can be extended?	[5M]	1	2
	b)	Derive an expression for the Deflecting torque in MC type instruments?	[5M]	1	5
		OR			
3.	a)	A moving coil instrument has a resistance of 15 Ω and gives a full scale deflection when carrying 60 mA. Show how it can be adopted to measure voltage up to 800 V and current 110 A.	[5M]	1	5
	b)	Explain the constructional and working details of electro dynamometer type wattmeter with a neat sketch.	[5M]	1	2
		UNIT-II			
4.	a)	Write short notes on three phase energy meter.	[5M]	2	5
	b)	Explain about creeping and its compensation in single phase induction type energy meter.	[5M]	2	2
		OR			
5.	a)	Explain the Construction and operation of Power factor meters?	[5M]	2	2
	b)	Explain the Construction and operation of Synchro – scopes?	[5M]	2	2
		UNIT-III			
6.	a)	Derive the equation of motion in ballistic galvanometer.	[5M]	3	5
	b)	A current transformer with single turn primary has 300 secondary turns and R = 1.5 iron loss of 1.2w, and X = 1 Ω. When secondary carries 5 A current, magnetizing m.m.f at of 100 A and calculate ratio and phase angle errors.	[5M]	3	5
		OR			
7.	a)	Explain the construction and Principle of operation of Current Transformer?	[5M]	3	2

	b)	Explain the methods which are used for the determination of B-H loop in detail?	[5M]	3	2
UNIT-IV					
8.	a)	Explain the Loss of charge method for the measurement of high resistance	[5M]	4	2
	b)	Draw the circuit diagram of a Wheatstone bridge and derive the conditions for balance.	[5M]	4	2
OR					
9.	a)	Explain the Principle of operation of Ramp type DVMs?	[5M]	4	2
	b)	Write brief notes on digital phase frequency meter.	[5M]	4	1
UNIT-V					
10.	a)	Draw and explain about the Piezo-Electric transducers, also derive for its torque.	[5M]	5	3
	b)	What is thermocouple and Explain? Write about its advantages and disadvantages.	[5M]	5	1
OR					
11.	a)	What are pressure transducers? Explain about capacitive pressure transducer	[5M]	5	1
	b)	What is a thermistor? Explain. Write about its advantages and disadvantages.	[5M]	5	1

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