Q.P. Code: 19EE0213 **R19**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech III Year I Semester Regular Examinations December-2021

ELECTRICAL MEASUREMENTS

(Electrical and Electronics Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	Explain the construction and working of permanent magnet moving coil instruments.	L2	6M
	b	Design an Aryton shunt to provide an ammeter with the current ranges 1 A, 5 A and 10 A. The basic meter resistance is 50 ohm and full scale deflection current is 1 mA.	L3	6M

OR

2	a	Derive an expression for the Deflecting torque in MI type instruments.	L3	6M
	b	List the advantages & disadvantages of MI type instruments.	L1	6M

UNIT-II

3	a	Draw the circuit diagram of a Wheatstone bridge and derive the condition for balance	L4	6M
	b	Explain the features of De-Sauty's Bridge with a neat sketch.	L2	6M

OR

4	a	Derive the general balance equation of AC Bridges with suitable diagram. What are the balance condition equations in polar and Rectangular forms?	L4	6M
	b	Explain how Wien's bridge can be used for experimental determination of frequency.	L2	6M

UNIT-III

5	a	Derive the torque equation for electro dynamo meter type wattmeter.	L4	6M
	b	A single phase kilo watt hour meter makes 500 revolutions per kilo watt hour. It is found on testing as making 40 revolutions in 58.1 seconds at 5KW full load. Find the percentage Error.	L4	6M

OR

6	a	Explain driving system, moving system and braking system in a single phase induction type energy meter.	L2	6M
	b	A 50A, 230 V meter on full load test makes 61 revolutions in 37 seconds. If the normal disc speed is 520 revolutions per Kwh , find the percentage error .	L4	6M

UNIT-IV

7	a	Explain the construction and its importance of Current transformer & Potential transformer.	L2	6M
	b	Describe the working principle of thermocouples.	L2	6M

OR

8	a	Describe the construction and working of LVDT with a neat schematic diagram.	L2	6M
	b	Discuss in detail about Thermistors.	L2	6M

UNIT-V

9	a	Explain the construction and working principle of Flux meter with a neat diagram.	L2	6M
	b	compare flux meter and Ballistic Galvanometer.	L2	6M

OR

10	a	Describe the method for determination of B.H curve of a magnetic material using: (i) Method of Reversals (ii) Six point method.	L2	6M
	b	List the advantages & applications of C R O.	L1	6M

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