Q.P. Code: 20EE0250 **R20**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year I Semester Regular & Supplementary Examinations May-2022

PRINCIPLES OF ELECTRICAL ENGINEERING

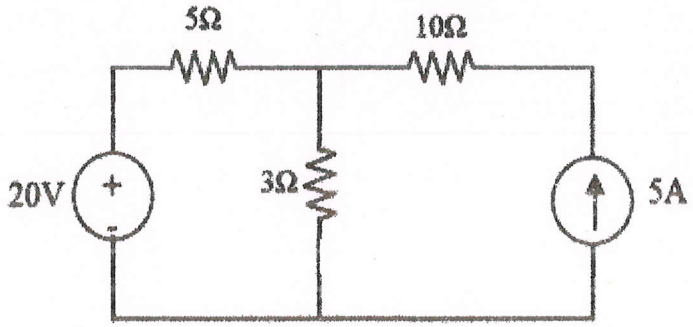
(Common to CSE, CSIT, CSM, CIC, CAD, CCC)

Time: 3 hours Max. Marks: 60

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

UNIT-I

1	a	Explain about Energy Sources.	L1	6M
	b	By using superposition theorem find the current flowing through the 3 ohm resistor.	L4	6M



OR

2	a	State and Explain about the ohm's law.	L1	6M
	b	Find the equivalent resistance between AB for the circuit shown below. R1=4Ω, R2=2Ω, R3=8Ω, R4=1Ω, R5=12Ω, R6=3Ω, R7=10Ω & R8=5Ω	L3	6M

UNIT-II

3		Derive an expression for the current and impedance for a series RL and RC circuit excited by a Sinusoidally alternating voltage. Draw the phasor diagrams.	L3	12M

OR

4	a	Derive an expression for average value of sine wave form.	L2	8M
	b	Discuss about peak value and form factor.	L2	4M

UNIT-III

5		Explain the Constructional details of DC machine with neat sketch.	L1	12M

OR

6	a	Derive the EMF equation of a DC generator.	L2	6M
	b	Explain OCC Characteristics of DC generator.	L2	6M

UNIT-IV

7		Discuss Open Circuit and Short Circuit tests on single phase transformer.	L4	12M

OR

8	a	Define the following (i) Synchronous speed (ii) Slip (iii) Rotor frequency.	L1	6M
	b	Describe the transformer losses.	L1	6M

UNIT-V

9		Explain operating principle of Permanent Magnet Moving Coil (PMMC) instruments.	L2	12M

OR

10		What is the purpose of voltmeter? Explain how the meter range will be extended with Multipliers.	L1	12M

*** END ***