Q.P. Code: 18EE0239

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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations Dec 2019

BASIC ELECTRICAL ENGINEERING

(Common to ECE, CSE, CSIT)

Time: 3 hours Max. Marks: 60

PART-A

(Answer all the Questions **5 x 2 = 10** Marks)

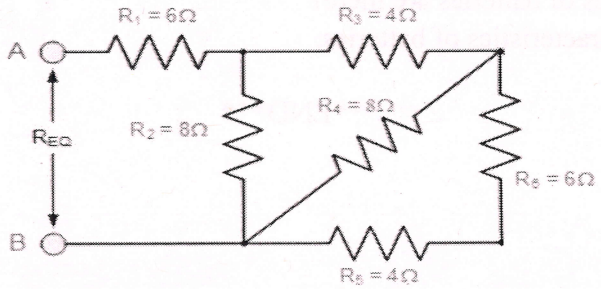
1	a	Derive the expression for energy stored in an inductor.	2M
	b	Define Form Factor and Peak Factor.	2M
	c	Give EMF equation of a transformer and define each term.	2M
	d	Why single-phase induction motor is not self-starting?	2M
	e	Define Fuse and Circuit Breaker.	2M

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

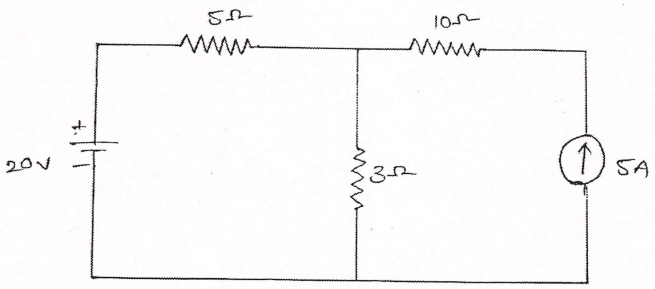
UNIT-I

2	a	Explain the circuit elements R, L & C.	5M
	b	Find the equivalent resistance between A-B terminals for the circuit shown Figure.	5M



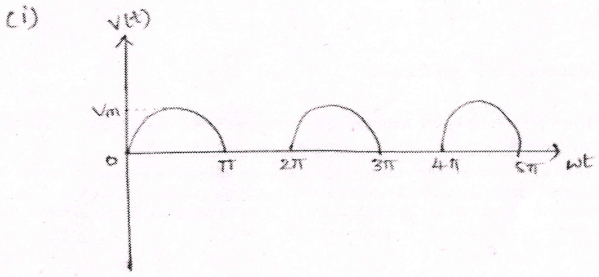
OR

3	a	State and Explain Superposition Theorem?	5M
	b	Find the current passing through 3Ω Resistor for the circuit shown below in Figure by using Superposition Theorem.	5M



UNIT-II

4	a	Find the form factor of the half wave rectified sine wave shown in figure.	10M



OR

5	a	Define Admittance and impedance.	4M
	b	The impedances of series circuit are Z1= (6+j8) ohms and Z2 = (8-j6) ohms. If the applied voltage is 120V. Find total impedance, current and power factor. Draw the phasor diagram.	6M

UNIT-III

6	a	Write a short note on efficiency of the transformer.	5M
	b	A 250KVA single-phase transformer has iron loss of 1.8KW, the full load copper loss is 2000W. Calculate efficiency at full load at 0.8 lagging power factor.	5M

OR

7	a	What is meant by autotransformer? Give some applications of autotransformer.	5M
	b	What are the advantages of Autotransformer when compared to two winding transformer?	5M

UNIT-IV

8	a	Explain the working principle of DC motor.	5M
	b	Write a short notes on the construction of DC motor.	5M

OR

9		Explain the working principle of single-phase induction motor.	10M

UNIT-V

10		Explain about earthing and how it plays an important role in installation.	10M

OR

11	a	How many types of batteries are there?	5M
	b	Explain the characteristics of batteries.	5M

END