Q.P. Code: 18EE0240 **R18**

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations July-2021

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to CE & AGE)

Time: **3 hours** Max. Marks:**60**

(Answer all Six Units **6 X 10 = 60**Marks)

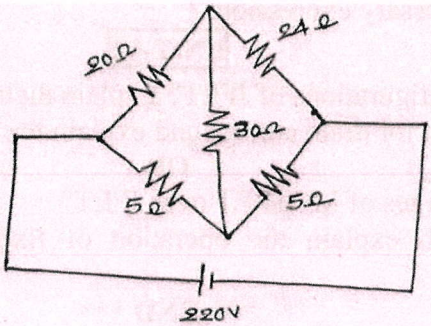
PART-A

UNIT-I

1	**a**	Explain about basic circuit components in detail.	**5M**
	b	Explain about KVL.	**5M**

OR

2		Find the current delivered by the source for the circuit shown in figure.	**5M**

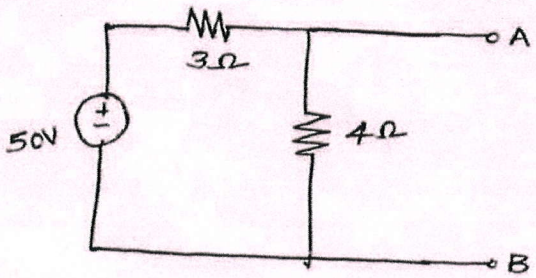


UNIT-II

3	**a**	Define and explain about Impedance parameters	**5M**
	b	Define and explain about Y- parameters	**5M**

OR

4	**a**	State Norton's theorem	**2M**
	b	Find Norton's equivalent circuit across AB for the circuit shown in below	**8M**



UNIT-III

5	**a**	Explain about principle of operation of DC Motors in detail.	**5M**
	b	Calculate the value of Torque established by the armature of a 4-pole motor having 774 conductors, 2 paths in parallel, 24 mwb flux per pole when the total armature current is 50A.	**5M**

OR

6	**a**	Derive EMF equation of a transformer	**5M**
	b	100KVA, 11000V/400V, 50Hz transformer has 40 secondary turns. Calculate the number of primary turns and primary and secondary currents.	**5M**

PART-B

UNIT-IV

7		Explain how current flows in a PN diode? With a neat sketch explain the VI characteristics of the diode?	10M

OR

8	a	With a neat sketch explain the operation of Full-wave rectifier?	5M
	b	Derive an expression for ripple factor of a Half-wave rectifier with and without load?	5M

UNIT-V

9	a	With a neat sketch explain the construction and working principle of NPN transistor?[	4M
	b	Draw the Output Characteristics of NPN transistor? Explain the operation of NPN transistors in three regions specified in the output characteristics?	6M

OR

10		Draw input and output characteristics CE configuration? Explain the Operation of CE transistor with necessary expressions?	10M

UNIT-VI

11	a	Sketch different configurations of JFET? Explain their importance in electronics?	5M
	b	Write the expression for drain current and explain the terms?	5M

OR

12	a	Discuss the Advantages of MOSFET over JFET?	5M
	b	With a neat sketch explain the operation of fixed bias configuration using MOSFET?	5M

***** END *****