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

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

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech I Year II Semester Supplementary Examinations March-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** Define RMS value, average value, form factor and peak factor. **5M**

b Show the form factor of the sine current is 1.11./ Find form factor of the sine Current. **5M**

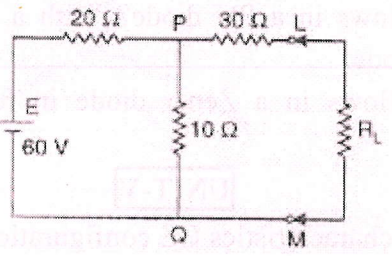
OR

2 **a** Explain about basic circuit components in detail. **5M**

b Explain about KVL. **5M**

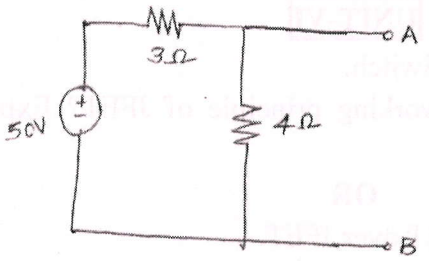
UNIT-II

3 Determine the maximum power delivered to the load in the circuit shown in fig **10M**



OR

4 **a** Find Thevenin's equivalent circuit across AB for the circuit shown in below **5M**



b The given Y-parameters are $Y_{11}=0.5, Y_{12}=Y_{21}=0.6, Y_{22}=0.9$. Find impedance. **5M**

UNIT-III

5	a	Calculate the value of Torque established by the armature of a 4-pole motor having 774conductors, 2 paths in parallel, 24mwb flux per pole when the total armature current is 50A.	5M
	b	Derive Torque equation of dc motor.	5M

OR

6	a	Explain principle of operation of transformer.	5M
	b	An ideal transformer has 1000 turns on its primary and 500 turns on its secondary the driving voltage of primary side is 100V and the load resistance is 5 Ω, calculate V2, I1and I2?	5M

PART-B

UNIT-IV

7	a	Explain the importance of filters in voltage regulators with necessary expressions?	5M
	b	Explain the following with an example i) Atom ii) Ion iii) Ohms law	5M

OR

8	a	Explain how current flows in a PN diode? With a neat sketch explain the VI characteristics of the diode.	5M
	b	Explain how current flows in a Zener diode in reverse bias with necessary diagrams.	5M

UNIT-V

9	a	Draw input and output characteristics CE configuration. Explain the Operation of CE transistor with necessary expressions.	5M
	b	Explain the following terms i)Biasing ii) Early effect iii) Q-point iv) Transportation factor	5M

OR

10	a	With a neat sketch? Explain the construction and working principle of NPN transistor.	5M
	b	Explain Emitter follower with necessary expression.	5M

UNIT-VI

11	a	Discuss how a MOSFET acts as a Switch.	5M
	b	With a neat sketch explain the working principle of JFET? Explain how the current flows in a JFET.	5M

OR

12	a	Discuss the Advantages of MOSFET over JFET.	5M
	b	Write the expression for drain current of a MOSFET and explain the terms.	5M

*** END ***