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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)

B. TECH II Year I Semester Regular & Supplementary Examinations Nov/Dec 2018
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(AGE,CSE,CSIT)

Time: 3 hours

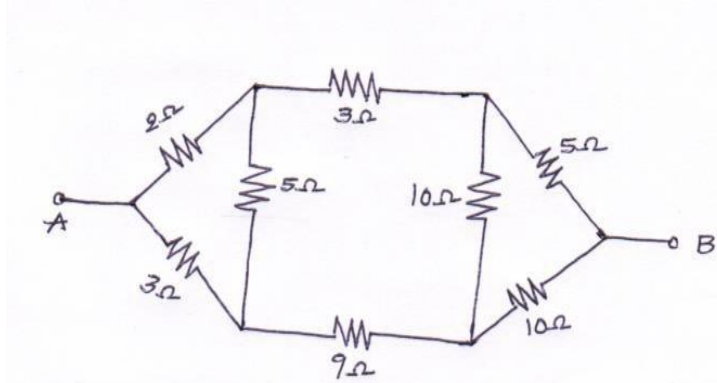
Max. Marks: 60

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

PART- A

UNIT-I

- 1 a. Find the voltage to be applied across AB in order to drive a current of 5A into the circuit. 10M



OR

- 2 Explain the following (a)Resistive networks (b)Inductive networks 10M

UNIT-II

- 3 State and prove Reciprocity theorem with an example. 10M

OR

- 4 The given ABCD parameters are $A=2, B=0.9, C=1.2, D=0.5$ find Y- parameters 10M

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 774conductors, 2 paths in parallel, 24mwb flux per pole when the total armature current is 50A. 5M

OR

- 6 a. Explain constructional details of transformer. 5M
b. A 20KVA, 2000V/200V, 50Hz transformer has 66 secondary turns. Calculate the number of primary turns and primary and secondary currents. Neglect losses 5M

PART – B

UNIT-I

- 7 a. Draw the circuit diagram of a Bridge Rectifier and explain its operation with input and output waveforms 5M
- b. Discuss the operation of half wave rectifier with capacitor filter. 5M

OR

- 8 Discuss Zener Diode breakdown mechanism. Draw the Zener diode in its reverse bias and explain its Volt-Ampere characteristics. 10M

UNIT-II

- 9 a. Draw the circuit diagram for a common base circuit arrangement and plot its input and Output characteristics. Show the different regions of the output characteristics and explain their occurrence. 5M
- b. Discuss with neat diagrams, the Common Emitter Configuration and its characteristics. 5M

OR

- 10 a. With neat circuit diagram and equations, explain Fixed Bias circuit of BJT. 5M
- b. Describe the Voltage Divider Bias Network of BJT with diagram and equation 5M

UNIT-III

- 11 a. What is an oscillator and how the oscillators are classified? Write Barkhausen criteria for Oscillator. 5M
- b. Explain the block diagram representation of an oscillator circuit. 5M

OR

- 12 a. What is an operational amplifier? With diagram, explain single input and dual input Op Amps 5M
- b. Discuss the Characteristics of an ideal operational amplifier 5M

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