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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR
(AUTONOMOUS)

B. TECH I Year II Semester Supplementary Examinations October-2020
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to CE & AGE)

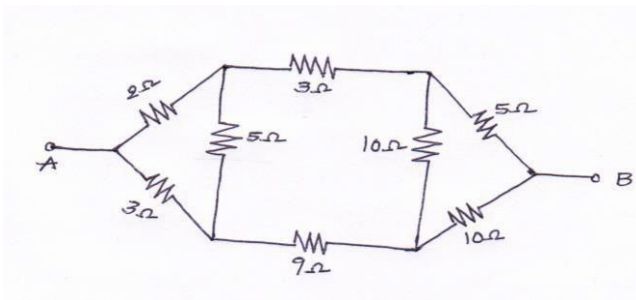
Time: 3 hours

Max. Marks: 60

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

PART-A**UNIT-I**

- 1 a Define and Explain about Energy sources in detail/Explain active elements in detail. 5M
b Explain about passive elements in detail? 5M
- OR**
- 2 Find the voltage to be applied across AB in order to drive a current of 5A into the circuit 10M

**UNIT-II**

- 3 a Explain about Y- parameters. 2M
b State and prove Reciprocity theorem with an example. 8M
- OR**
- 4 a The given ABCD parameters are $A=2$, $B=0.9$, $C=1.2$, $D=0.5$ find Y- parameters. 5M
b Define and explain about Impedance parameters. 5M

UNIT-III

- 5 a A Single phase 2200/250V, 50Hz transformer has a net core area of 36cm^2 and a maximum flux density of 6wb/m^2 . Calculate the number of turns of primary and secondary. 5M
b Explain OC and SC test of a single phase transformer. 5M

OR

- 6 a Explain about principle of operation of DC Motors in detail. 5M
b A 100KVA, 11000V/400V, 50Hz transformer has 40 secondary turns. Calculate the number of primary turns and primary and secondary currents. 5M

PART – B**UNIT-I**

- 7 a Draw the Crystal Lattice structure of Si? Explain how charge flows through the lattice. 5M
b Explain Energy band gap in semiconductor with a neat sketch. 5M

OR

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

UNIT-II

- 9 a Explain Emitter follower with necessary expression. 5M
b Explain why self-Bias is widely used in Amplifiers. 5M

OR

- 10 a Explain the any five applications of BJT in modern Electronics. 5M
b What is a Transistor? With a neat sketch explain how current flows in a transistor. 5M

UNIT-III

- 11 a Draw and Explain the construction of n-channel Enhancement mode MOSFET. Explain how current flows through the MOSFET. 5M
b Write the expression for drain current and explain the terms. 5M

OR

- 12 a Explain the static characteristics of MOSFET. 5M
b Explain the output characteristics JFET. 5M

*** END ***