

December, 2019

First/Second Semester

Time: Three Hours

Common for CSE, IT, MECH

Basic Electrical & Electronics Engineering

Maximum: 50 Marks

Answer Question No.1 compulsorily.

(1X10 = 10 Marks)

Answer ONE question from each unit.

(4X10=50 Marks)

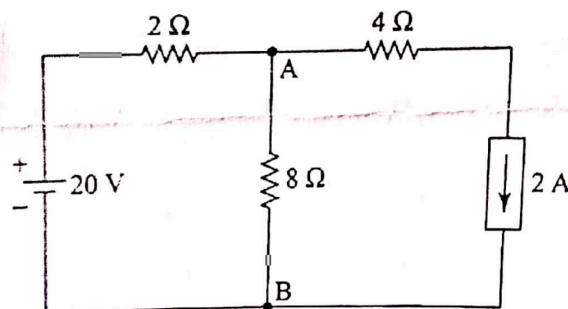
1. Answer all questions

(1X10=10 Marks)

- State KVL.
- State Norton's theorem.
- What is Form factor?
- What is the working principle of transformer?
- Define slip in induction motor.
- Define Clipper.
- Write the applications of Zener diode.
- Draw the circuit for CB configuration of transistor.
- Draw the symbol of JFET.
- Write any two properties of Ideal op-amp.

### UNIT I

- Derive the RMS value, average value, peak and form factor for a complete sine wave. 5M
- Calculate current through  $8\Omega$  using superposition theorem for the circuit shown in below fig. 5M



(OR)

- Explain the relation between line and phase quantities in star and delta connected three phase system. 5M
- Explain time domain analysis of series RC circuit. 5M

### UNIT II

- Explain the construction of single phase transformer. 5M
- Explain the concept of Rotating magnetic field in detail. 5M

(OR)

- Define the following terms  
i) Real power ii) Reactive power iii) Apparent power iv) Power factor 4M
- Explain the working of synchronous generator. 6M

### UNIT III

- Explain the operation of zener diode and draw the V-I characteristics. 5M
- Explain the operation and analysis of Full wave rectifier. 5M

(OR)

- Explain the input and output characteristics of transistor in CE configuration with neat sketch. 5M
- Explain clampers. 5M

### UNIT IV

- Explain the operation of JFET and draw the drain and transfer characteristics. 5M
- Explain the operation and draw the characteristics of depletion MOSFET. 5M

(OR)

- Explain the working of practical integrator circuit and derive the expression for output voltage. 5M
- Explain the operation of non inverting op-amp 5M