



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
MID TERM EXAMINATION - NOV 2023**

**Semester :** Semester I - 2023

**Course Code :** EEE1001

**Course Name :** Sem I - EEE1001 - Fundamentals of Electrical and Electronics Engineering

**Program :** B. TECH

**Date :** 3-NOV-2023

**Time :** 11:30AM - 1:00PM

**Max Marks :** 50

**Weightage :** 25%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

1. State Kirchhoffs' laws (CO1) [Knowledge]
2. Amount of work to be done to move the charge from one place to another is called as  
a) Voltage b) Potential Difference c) Both of these d) Potential Break (CO1) [Knowledge]
3. The rate at which electric energy is converted to other forms of energy, equal to the Product of the current and the voltage drop is called as  
a) Energy b) Current c) Power d) Voltage (CO1) [Knowledge]
4. What is capacitive reactance in AC circuit ?, what is its unit? (CO1) [Knowledge]
5. What is the equation of Current division rule as applied to Electrical circuits? (CO1) [Knowledge]

**PART B**

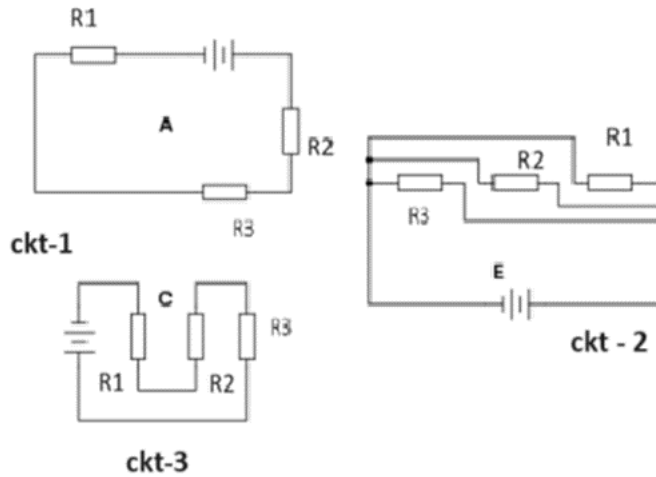
**ANSWER ALL THE QUESTIONS**

**(4 X 5 = 20M)**

6. a) How much voltage does the light bulb receive in this circuit? Explain your answer.



7. a) Analyze the given 3 circuits.  $R_1, R_2, R_3$  are in ohms and Source voltage is  $E$  volts



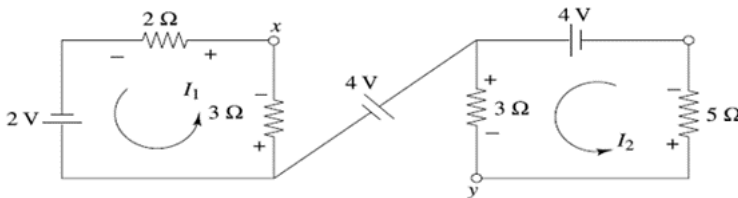
- b) What is the main limitation of Ohm's Law

(CO1) [Comprehension]

8. Define Form Factor in AC Circuits. Also Write the Voltage and Current equations in a purely inductive circuit

(CO1) [Comprehension]

9.



- Determine  $i_1$  and  $i_2$  the loop currents

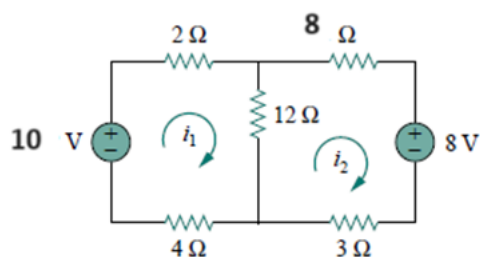
(CO1) [Comprehension]

### PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

10. a) Calculate the source current in loop 1 for the given circuit using mesh/loop current method, Also find the Power dissipated in  $4\Omega$  Resistor



- b) A resistance of  $5\Omega$  is connected in series with a parallel combination of Resistances  $2\Omega$  &  $10\Omega$ . The total power consumed by the Circuit is  $1200W$  and the applied Voltage is  $100V$  Find  $R$ .

(CO1) [Application]