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**PRESIDENCY UNIVERSITY
BENGALURU**

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

Semester : Semester I - 2023

Course Code : EEE1001

Course Name : Fundamentals of Electrical and Electronics Engineering

Program : B.TECH

Date : 9-DEC-2023

Time : 11:30 AM - 01:00 PM

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.*
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PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

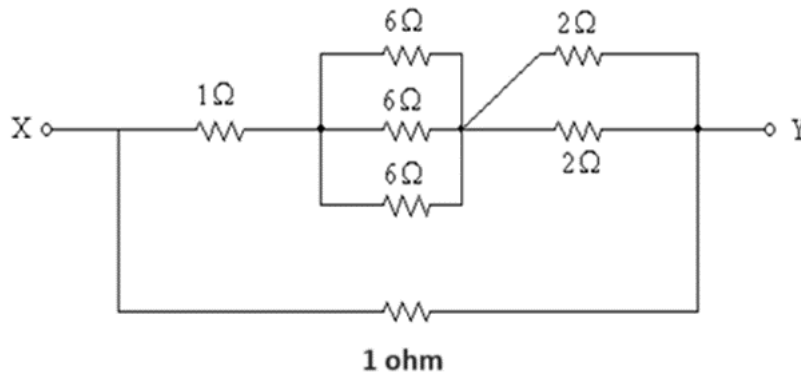
1. What is the equation of Current division rule as applied to Electrical circuits?
(CO1) [Knowledge]
2. What is inductive reactance in AC circuit , What is the unit?
(CO1) [Knowledge]
3. What is capacitive reactance in AC circuit ?, what is its unit?
(CO1) [Knowledge]
4. Capacitor is an example of _____
a) Active Element b) Inactive element c) Passive element d) Dissipating element
(CO1) [Knowledge]
5. 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]

PART B

ANSWER ALL THE QUESTIONS

(4 X 5 = 20M)

6.



Determine the equivalent resistance across XY

(CO1) [Comprehension]

7. Two resistances 1Ω & 2Ω are connected in parallel; another two resistors 4Ω & 6Ω are also connected in parallel. These two branches are connected in series. A Voltage of $100V$ is applied across the combination. Find any 2 unknown values from the given data

(CO1) [Comprehension]

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

(CO1) [Comprehension]

9. Draw the phasor diagram of a circuit with only resistance & a circuit with only pure inductance and briefly explain with appropriate diagrams

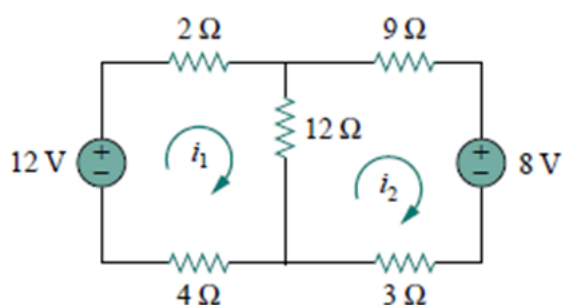
(CO1) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

10. a) A resistance of R ohm is connected in series with a parallel combination of 5Ω and 10Ω . The total power consumed by the Circuit is $1200W$ the applied Voltage is $100V$ Find R .
b) Calculate the voltage drop across the 2Ω Resistor using mesh/loop current method for the circuit given below



(CO1) [Application]