

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

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

Semester : Semester I - 2023

Course Code : EEE2002

Course Name : Sem I - EEE2002 - Electric circuit Analysis

Program : B. TECH

Date : 11-DEC-2023

Time : 2:30 PM - 4:00 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.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

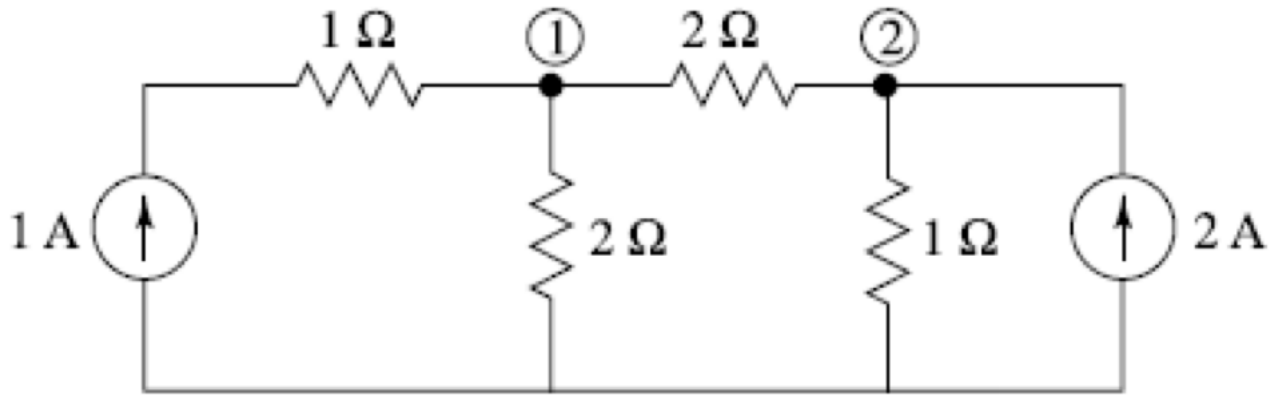
1. Define Capacitance. What are factors on which capacitance of capacitor depends?
(CO1) [Knowledge]
2. If the network contains B branches and N nodes then the no. of mesh currents are given by $M = \dots\dots\dots$
(CO1) [Knowledge]
3. Define inductance. What are the factors on which inductance depends?
(CO1) [Knowledge]
4. Output characteristics of an independent source are not dependent on any network variable such as a current or voltage. Its characteristics, however, may be time-varying. What are the two types of independent sources? Define them.
(CO2) [Knowledge]
5. Differentiate between Linear and Non-Linear elements
(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

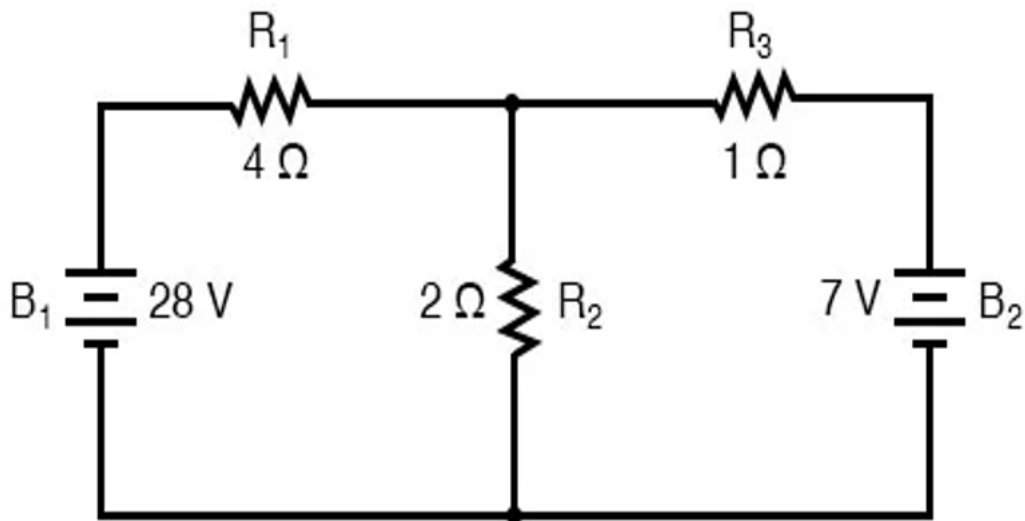
(2 X 10 = 20M)

6. In mesh analysis, the currents in different meshes are assigned continuous paths so that they do not split at a junction into branch currents. If a network has a large number of voltage sources, it is useful to use mesh analysis. Find voltage at nodes 1 and 2.



(CO1) [Comprehension]

7. Using mesh method, find the current through 2Ω resistance for the network shown in Figure. Also find out the voltage drop across the same.



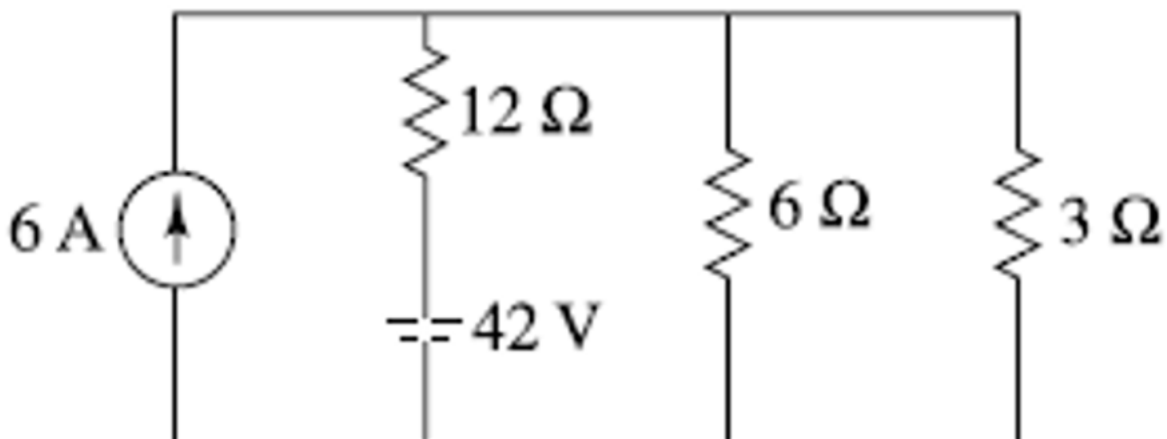
(CO1) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION

(1 X 20 = 20M)

8. Find the current through 3-ohm resistance using thevenin's theorem.



(CO2) [Application]