ENROLLMENT NO.....

Subject Code:ES103

Minor Exam-October 2024

Basic Electrical Engineering

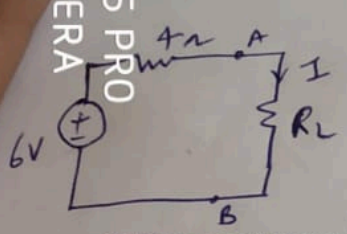
Maximum marks: 30

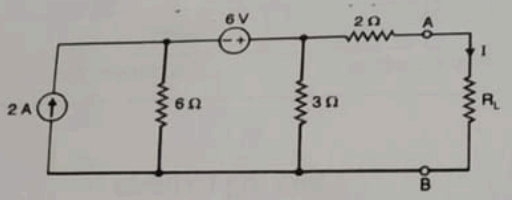
Time: 01Hr

Note: Attempt questions as directed. Calculators are allowed.

SECTION-A (Attempt any two questions, Each of 05 Marks)

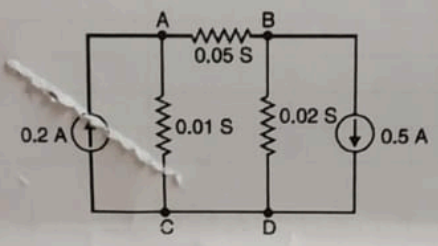
Q.1 Find Thevenin's equivalent circuit to the left of terminals AB in Fig below.





Q.2 Using nodal analysis, find the current through 0.05 S conductance in Fig below

0.264A



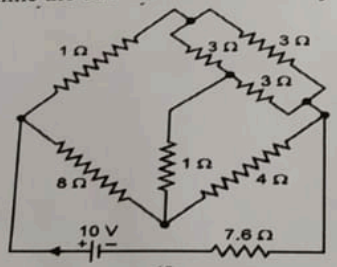
Q.3 Define the following terms

a) Junction
b) Active and Passive Elements
c) Node
d) Bilateral Circuit
e) Linear Circuit

SECTION-B (Attempt any One question, 10 Marks)

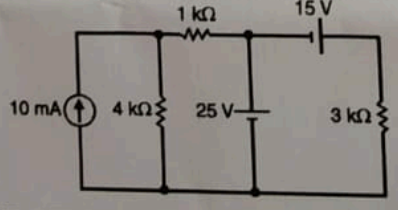
Q.1. Using Star Delta Transformation determine the current from the battery in circuit shown in fig below.

1A



Q.2 Using the superposition principle, find the voltage across 1k Ω resistor in Fig. below. Assume the sources to be ideal.

3V (-+)



SECTION-C (Compulsory, 10 Marks)

Q 1. State and verify Maximum Power Transfer Theorem for DC Circuits. Also show that

a) Maximum Power is $V_{Th}^2/4R_L$

b) Efficiency of the circuit at Maximum Power is 50%