

Course Name:	Elements of Electrical and Electronics Engineering	Semester:	I
Exam:	EEEE IA1	Division:	C1 to C7

Q1. Calculate the current through $30\ \Omega$ resistor using Thevenin's theorem. In the circuit shown in figure 1, the value of R_1 will be the **last two digits of roll no. times Ω**

For eg: For Roll no: 1000020, then $R_1 = 20\ \Omega$. If your last digits are from 01 to 10, kindly add 10 to your last two digits, so roll no with last two digits with 01 will become 11, then $R_1 = 11\ \Omega$ **(ODD ROLL NO ATTEMPT Q1)**

- Simulate the circuit shown in figure 1, using LTspice software and measure V_{th} , R_{th} and I_L .
- Also solve the numerical theoretically and calculate V_{th} , R_{th} and current through $30\ \Omega$ load resistor (I_L)

Tabulate the results as shown in the table below.

Parameter	Theoretical value	Simulated value
Thevenin's voltage V_{th}		
Thevenin's resistance R_{th}		
Load current I_L		

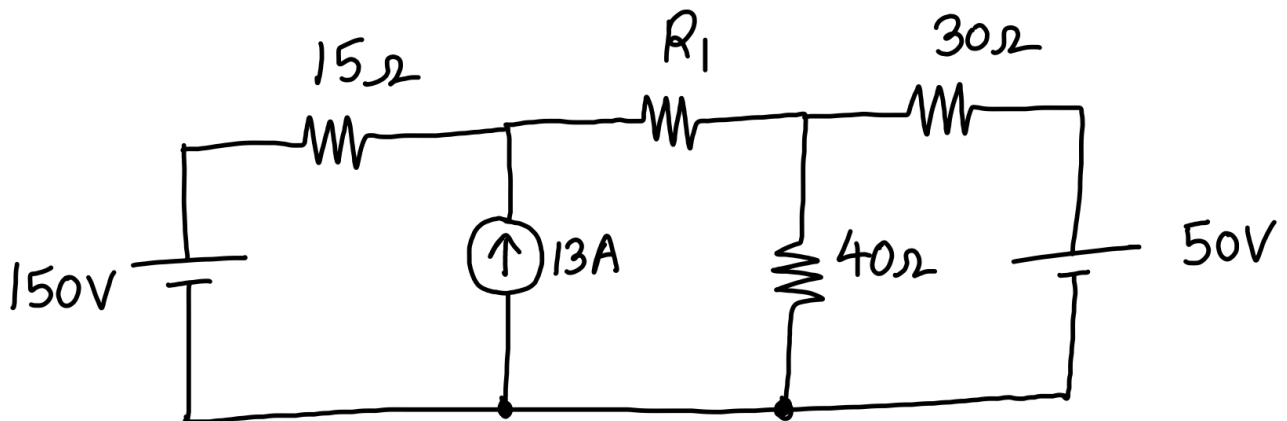


Figure 1

Q2. Calculate the current through $4\ \Omega$ resistor using Norton's theorem. In the circuit shown in figure 2, the value of R_1 will be the **last two digits of roll no. time's Ω**

For eg: For Roll no: 1000020, then $R_1 = 20\ \Omega$. If your last digits are from 01 to 10, kindly add 10 to your last two digits, so roll no with last two digits with 01 will become 11, then $R_1 = 11\ \Omega$ **(EVEN ROLL NO ATTEMPT Q2)**

- Simulate the circuit shown in figure 2, using LTspice software and measure V_{th} , R_{th} and I_L .
- Also Solve the numerical theoretical and measure I_N , R_N and current through $4\ \Omega$ load resistor (I_L)

Tabulate the results as shown in the table below.

Parameter	Theoretical value	Simulated value
Norton's current I_N		
Norton's resistance R_N		
Load current I_L		

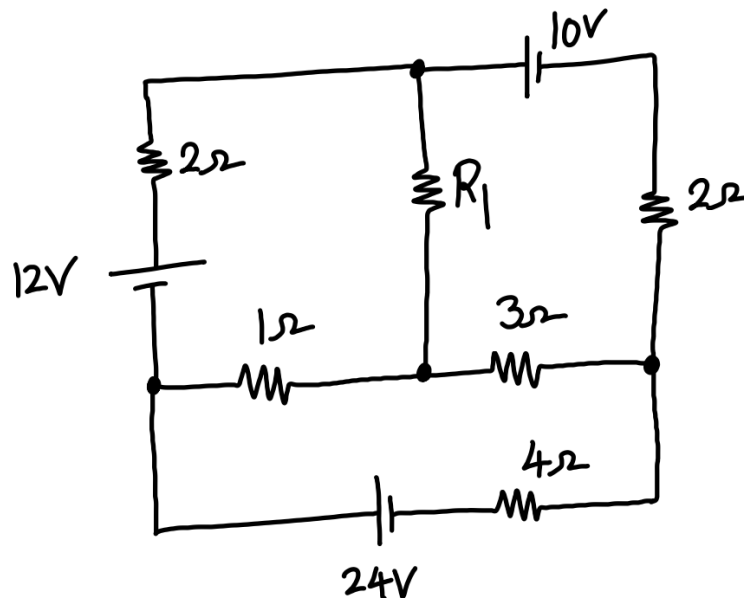


Figure 2

- Q3.** Explain Switch Fuse unit (SFU) and MCB with a neat labelled diagram.
- Q4.** Explain the principle & working of Energy meter with a neat labelled diagram.
- Q5.** Explain the principle & working of Megger with a neat labelled diagram.
- Q6.** Mention the types of batteries and explain the important characteristics for batteries.
- Q7.** Compare incandescent light bulb, compact fluorescent lamp (CFL), and LED (write any 8 points of differences)

If last two digits of roll no are from 00, 01 to 20, attempt Q3

If last two digits of roll no are from 21 to 40, attempt Q4

If last two digits of roll no are from 41 to 60, attempt Q5

If last two digits of roll no are from 61 to 80, attempt Q6

If last two digits of roll no are from 81 to 99, attempt Q7

XXXXXXXXXXXXXX