



# United International University

Department of Computer Science and Engineering

Course Code: EEE 2113 | Course name: Electrical Circuit

Fall 2021 | MID Examination | 30 marks | 1 hour and 45 minutes

There are four (4) questions here. Answer all of them

1. From the circuit above, calculate :

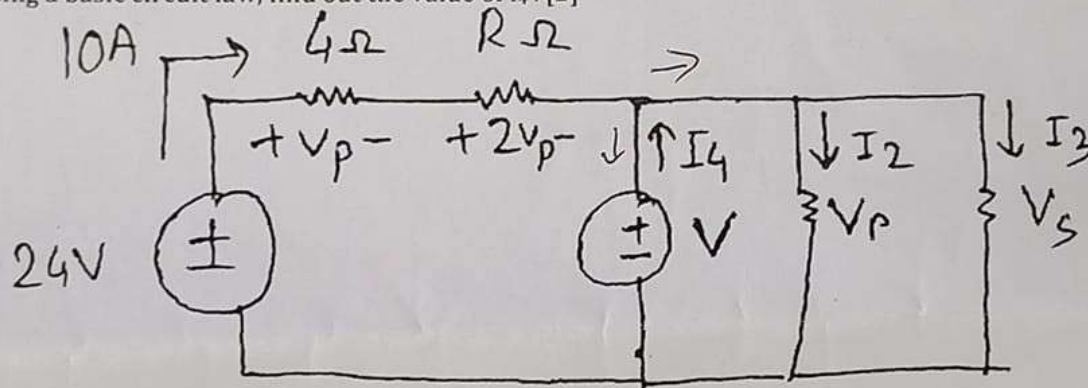
[10]

i)  $V_p$  and  $R$ . [3]

ii) Use a basic circuit law to find out the value of  $V$ . [2]

iii) State the values of  $V_r$  and  $V_s$ . Given that the resistances of  $V_r$  and  $V_s$  are  $12\ \Omega$  and  $24\ \Omega$  respectively, Calculate  $I_2$  and  $I_3$ . [3]

iv) Using a basic circuit law, find out the value of  $I_4$ . [2]



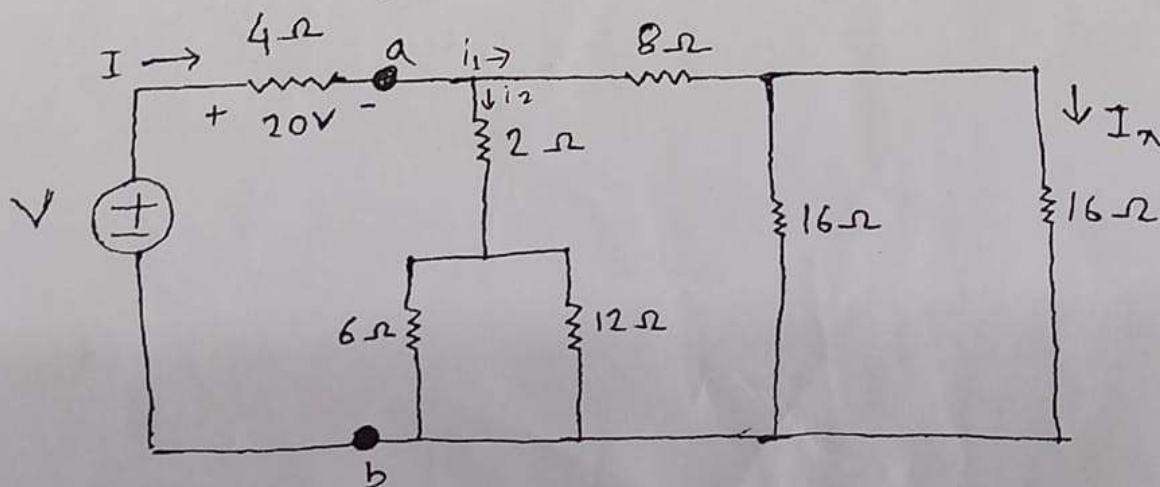
2.

[10]

i) Calculate the equivalent resistance to the right of terminals a-b. It might be helpful for you to draw Simplified circuits as you find the equivalent resistance. [4]

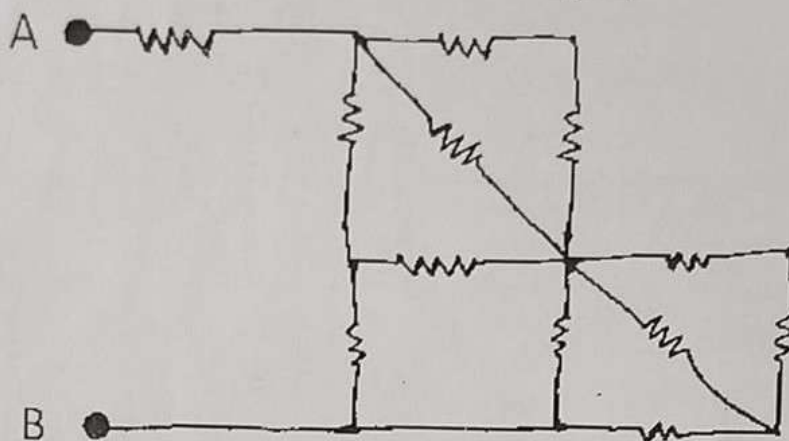
ii) Given that the voltage across the  $4\ \Omega$  resistor is  $20V$ , use voltage division rule to calculate the voltage,  $V$ , of the voltage source. [2]

iii) Calculate the value of  $I$ , and hence use current division rule to calculate  $I_x$  [4]



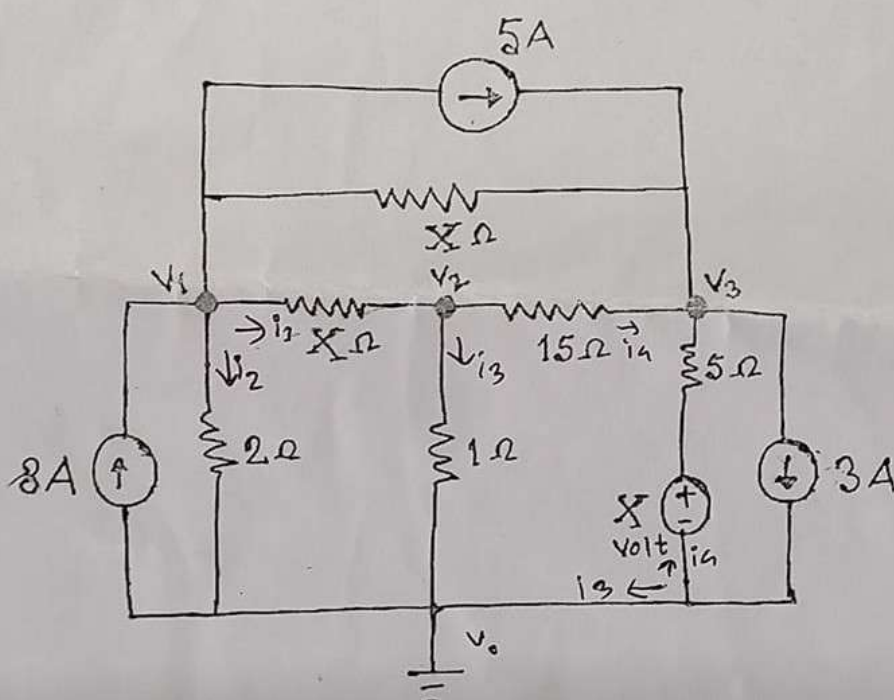
3. In the following figure, the value of each resistance is  $R \Omega$ . Here,  $R$  = last digit of your birth year + 5. Find out the  $R_{eq}$  at Terminal AB (Marked in the Figure).

[5]



4. In the following figure,  $X = (2 + \text{Last digit of birth month}) + 3$ . Find out the value of node voltages  $V_1$ ,  $V_2$  and  $V_3$  applying node analysis.

[5]



Any examinee found adopting unfair means will be expelled from the trimester / program as per UIU disciplinary rules