United International University
Department of Computer Science and Engineering
Course Code: EEE 2113 | Course name: Electrical Circuit

SPRING 2022 | FINAL Examination | 40 marks | 2 hours

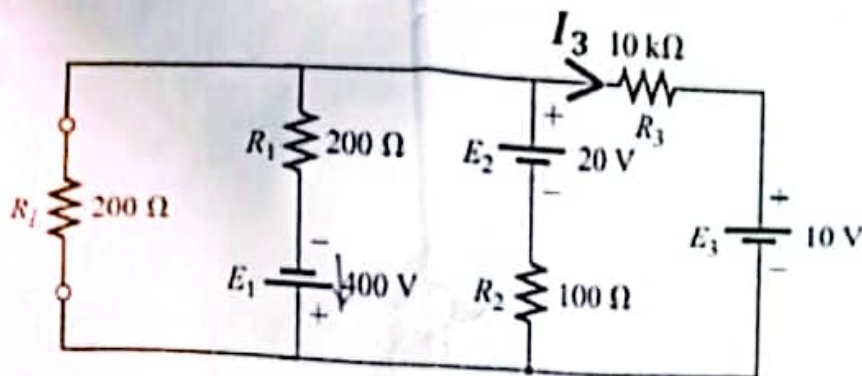There are five (5) questions here. You have to answer all of them.

1.

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Fig. Q1 for Question 1

a) Determine the voltage across the load resistance (R_L), using source transformation theorem for the above circuit in Fig. Q1.

b) Determine the current I_3 using superposition theorem for the above circuit in Fig. Q1.
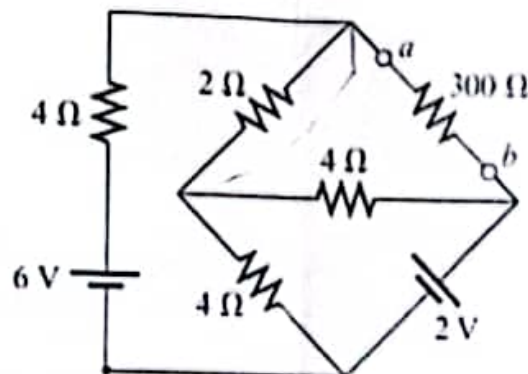
2.

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Fig. Q2 for Question 2

For the above circuit shown in Fig. Q2, answer the following questions:

a) Determine the Norton Equivalent circuit at terminal a-b.

b) Determine the current through the 300Ω using the Norton equivalent circuit determined in (a).
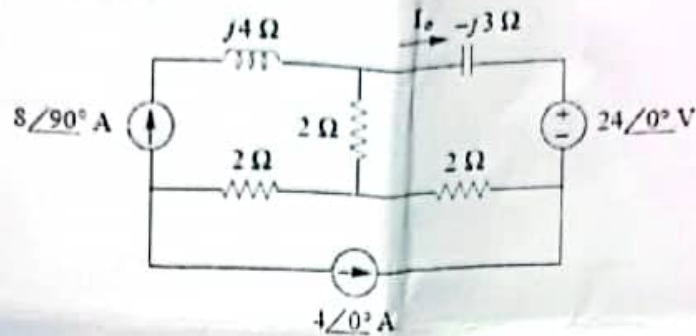
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Fig. Q3 for Question 3

Find I_o in the following circuit shown in **Fig. Q3** using superposition theorem.
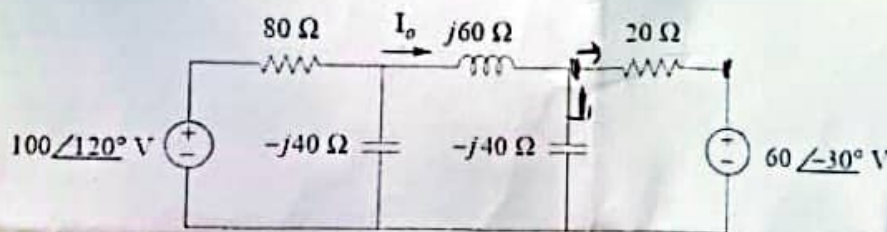
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4.

Fig. Q4 for Question 4

(a) Find **Io** using **nodal analysis** method for the above circuit shown in **Fig. Q4**.
(b) Also find the **voltage** across the **20 Ω resistor** for the above circuit shown in **Fig. Q4**.
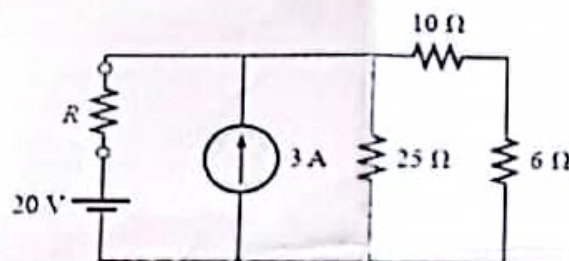
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5.

Fig. Q5 for Question 5

(a)Find the Thevenin equivalent circuit for the network external to the **resistor R** in the above circuit shown in **Fig. Q5**.
(b)Find the **value of R** for maximum power absorption and also calculate the amount of maximum absorbed power by R Fig. Q5.