United International University

Department of Computer Science and Engineering

Course Code: EEE 2113 | Course name: Electrical Circuit

SPRING2022 | FINAL Examination | 40 marks | 2 hours

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

1. 8

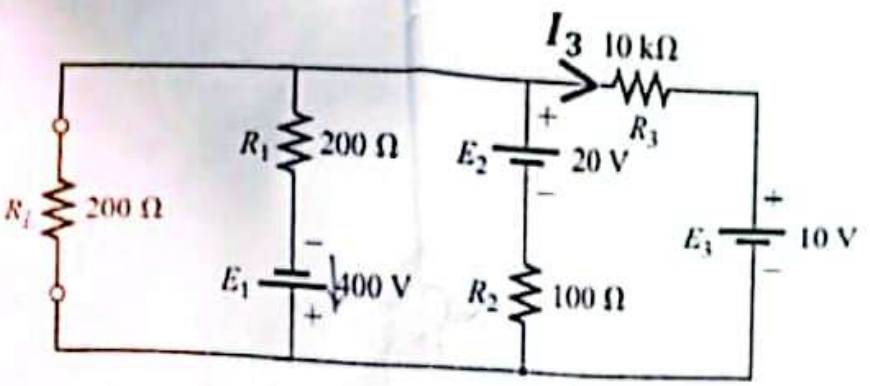

Fig. Q1 for Question 1

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. 8

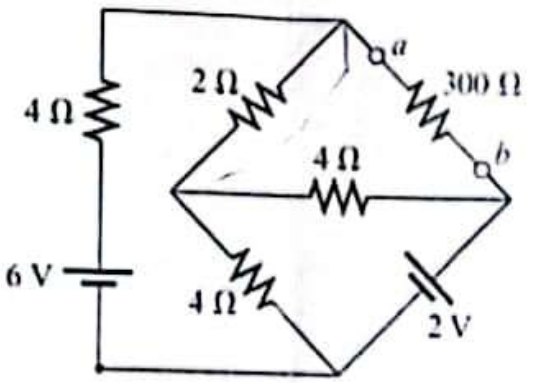

Fig. Q2 for Question 2

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).

3. 8

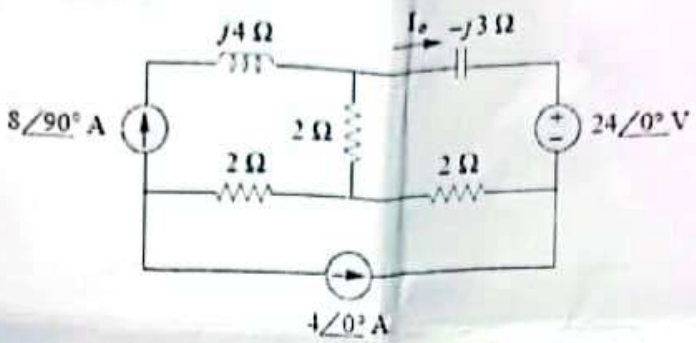

Fig. Q3 for Question 3

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

4. 8

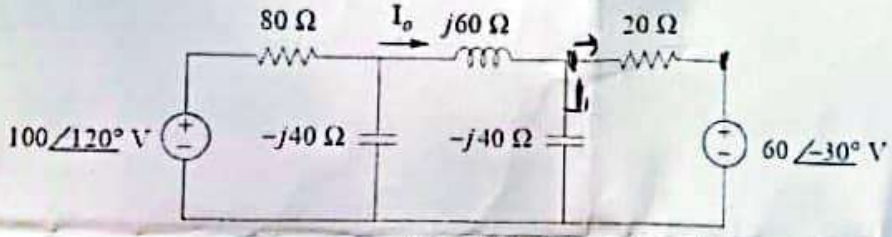

Fig. Q4 for Question 4

(a) Find $\mathbf{I_o}$ 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.**

5. 8

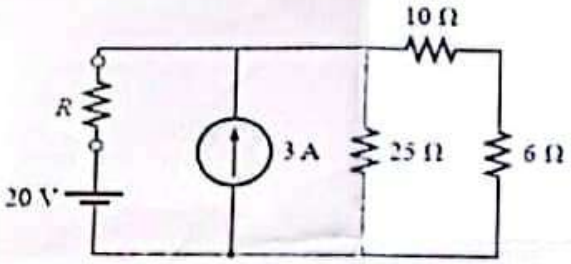

Fig. Q5 for Question 5

(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.**

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