LAU
الجامعة اللبنانية الأميركية
Lebanese American University

LAU School of Engineering
Department of Electrical and Computer Engineering

ELE 305: Introduction to Electrical Engineering

Exam 1 – Fall 2016

Duration: **1 hour 30 minutes**
Date: 8/10/2016
Start Time: 2:00 pm

Dr. Harag Margossian

Name: _____ **ID#:** _____

INSTRUCTIONS:

- Answer each of the following questions in the space provided.
- You can use both sides of the sheets for answers.
- Solutions written outside this booklet will not be graded.
- This is a closed-book exam
- Programmable calculators and smart devices are not allowed.
- The number of points for each question is specified next to it.
- The total number of points is 100.

1	2	3	4	5	Total
/10	/15	/20	/25	/30	/100

Question 1 (10 points)

The current entering an element is shown in Figure 1. Find the charge that enters the element in the time interval 0<t<30s

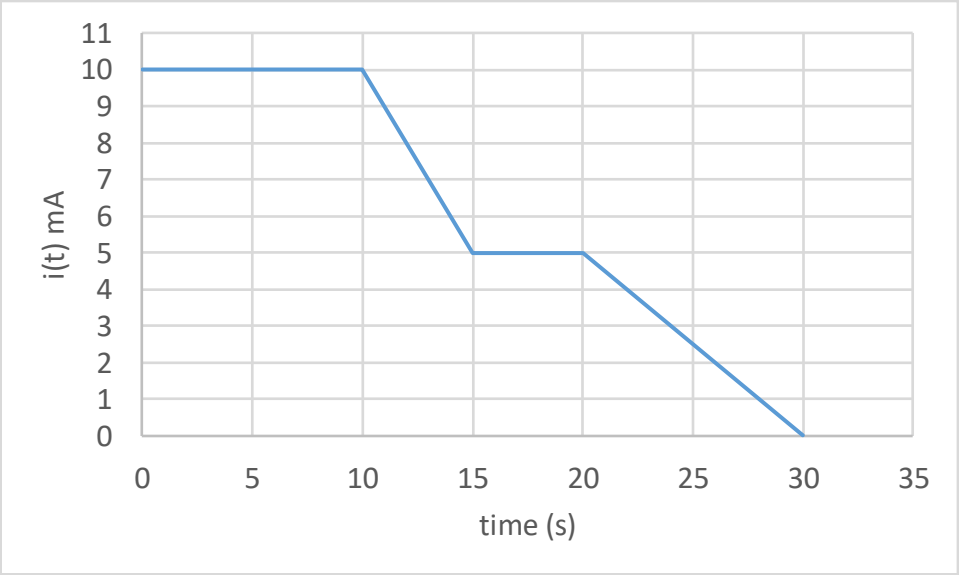

Figure 1

Question 2 (15 points)

Find R_{AB} in the network in Figure 2.

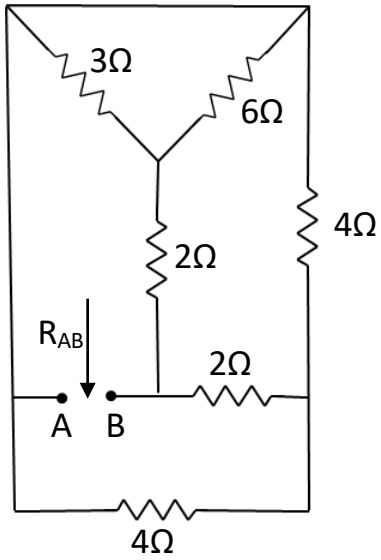

Figure 2

Question 3 (20 points)

Use superposition to find V_o in the network in Figure 3.

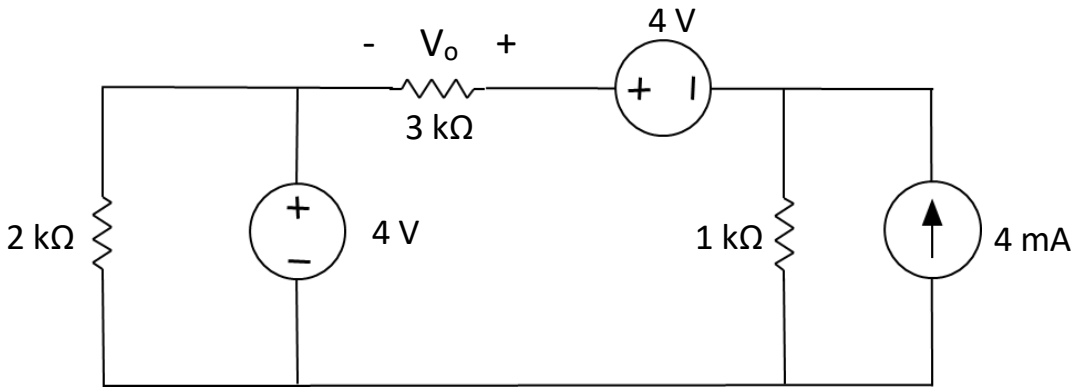

Figure 3

Question 4 (25 points)

Use source transformation to find I_o in the network in Figure 4.

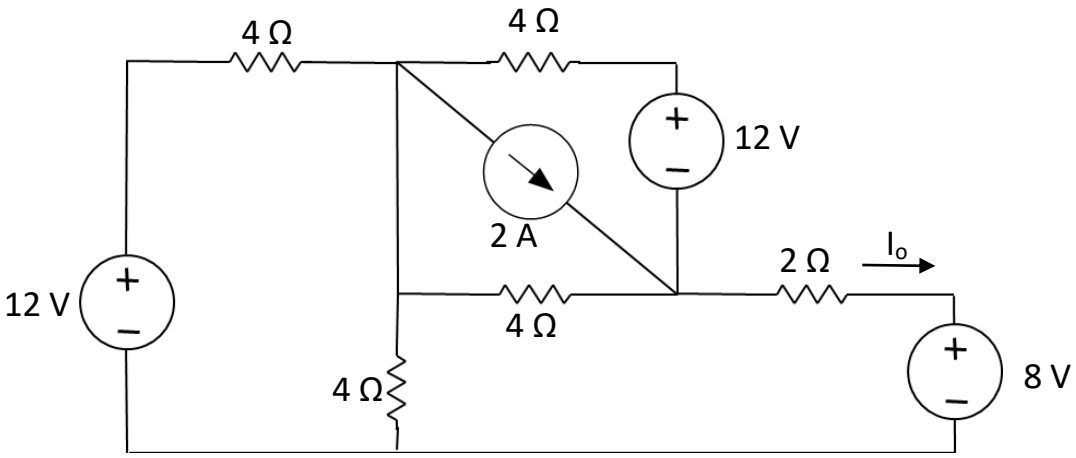

Figure 4

Question 5 (30 points)

Consider the network in Figure 5.

a. Find the thevenin equivalent of Circuit A as seen by the rest of the network.
b. Calculate the maximum power that can be transferred to R_L and the value of R_L for which this happens.

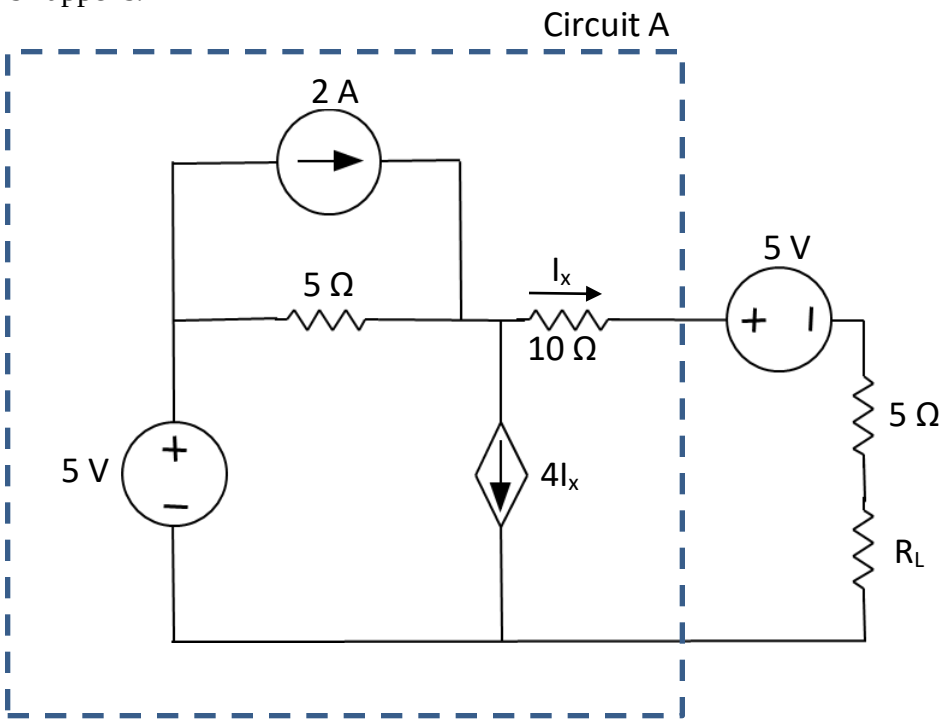

Figure 5