Birzeit University
Faculty of Engineering
Electrical Engineering Department
Network Analysis I – ENEE 232
First Hour Exam

6 March 2012 **Instructors: Hussein Zeitawi & Ashraf Al-Rimawi** **Time: 60 min**

Student Name: **ID Number:**

Question # 1:

From the circuit shown in figure 1, and Figure 2

a. The value of α constant
b. The value of μ constant

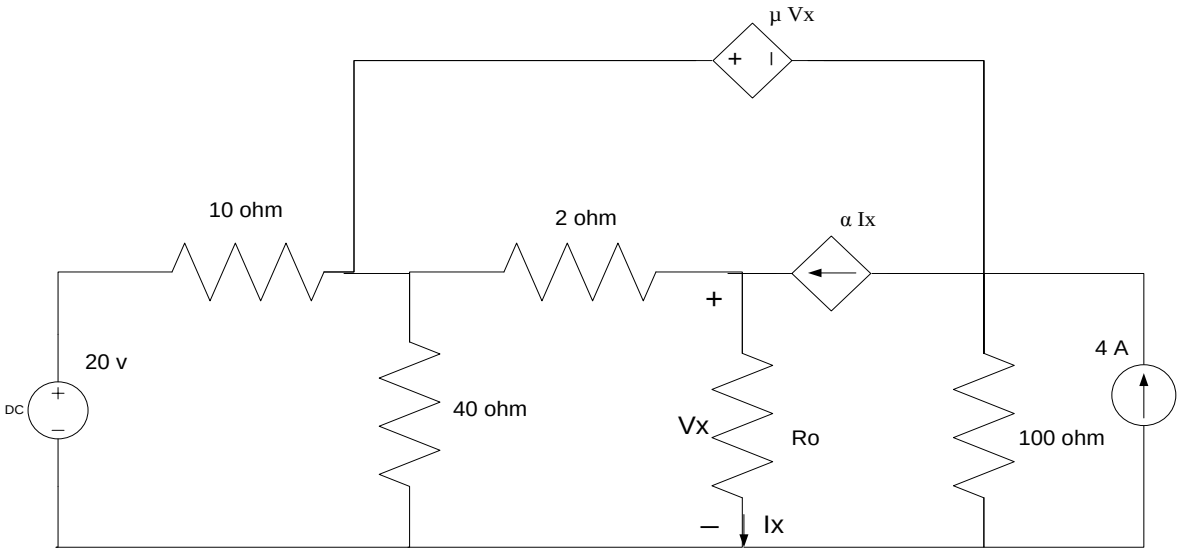

Fig 1

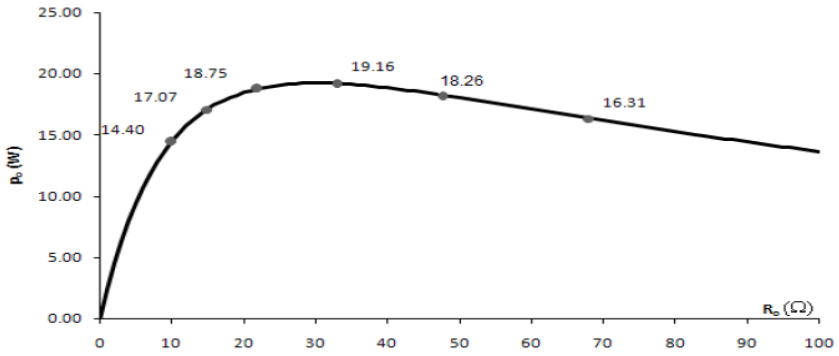

Fig 2

Question # 2:

For Circuit shown in figure 3, Use Superposition Technique to find the value of V_x

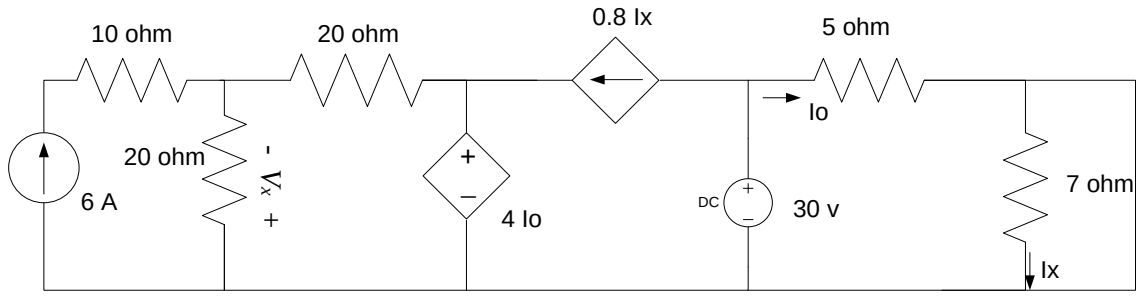

Fig 3

Question # 4:

For the circuit shown in Figure 4, Find $V_o(t)$ for t > 0.

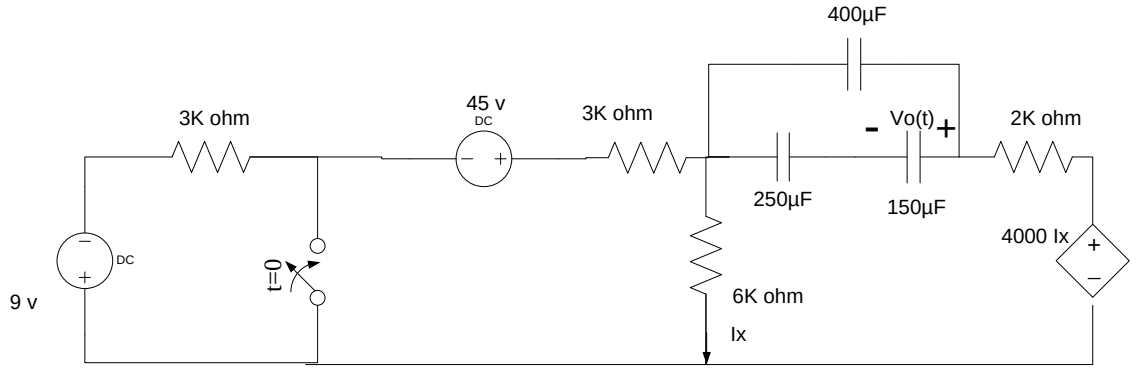

Fig 4

... With Best Wishes ...

DEPARTMENT OF ELECTRICAL ENGINEERING
ENEE231: Network Analysis I
Final Exam
Date:16 July 2013 Time: 2 pm – 4.30pm – 150 minutes
Calculators must not be used to store text and/or formulae nor be capable of communication.
Invigilators may require calculators to be reset.
Instructors: Mr. Hakam Shehadeh & Mr. Ashraf Al-Rimawi

……

Question One [**10**%]

Find Vx using **Nodal Analysis** only.

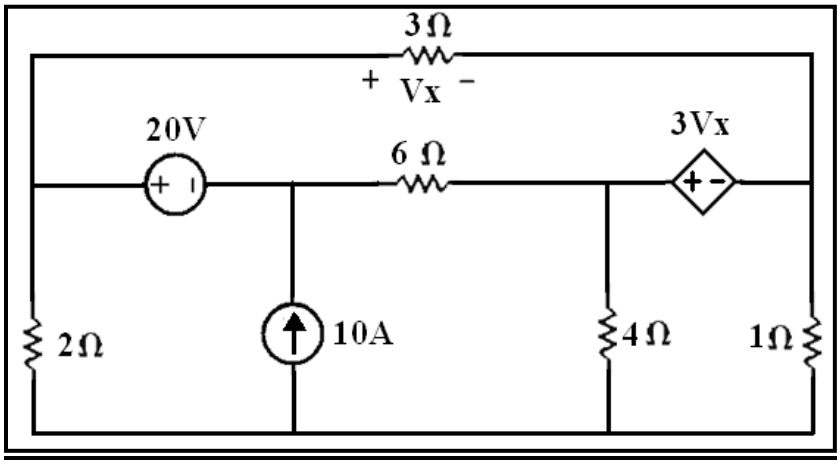

Figure Q1

Question Two [**20**%]

For the following circuit shown in figure Q2. Find V_x

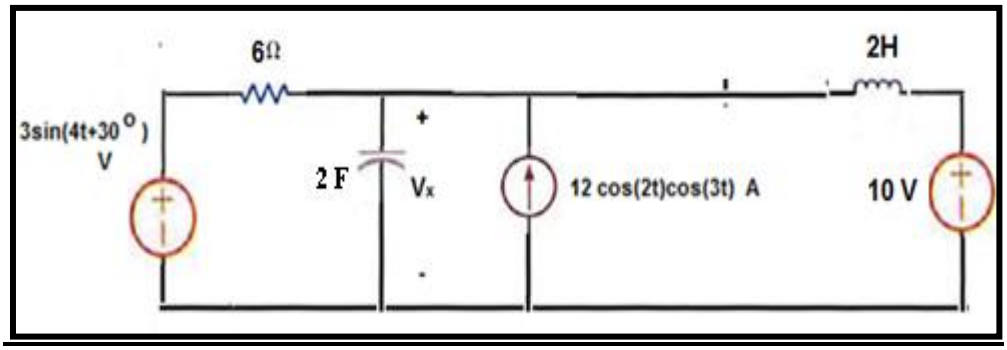

Figure Q2

Question Three [**15**%]

For the network in figure Q3.

1-compute the input source voltage Vs.

2-compute the total complex power supplied by the source.

3- compute the input power factor.

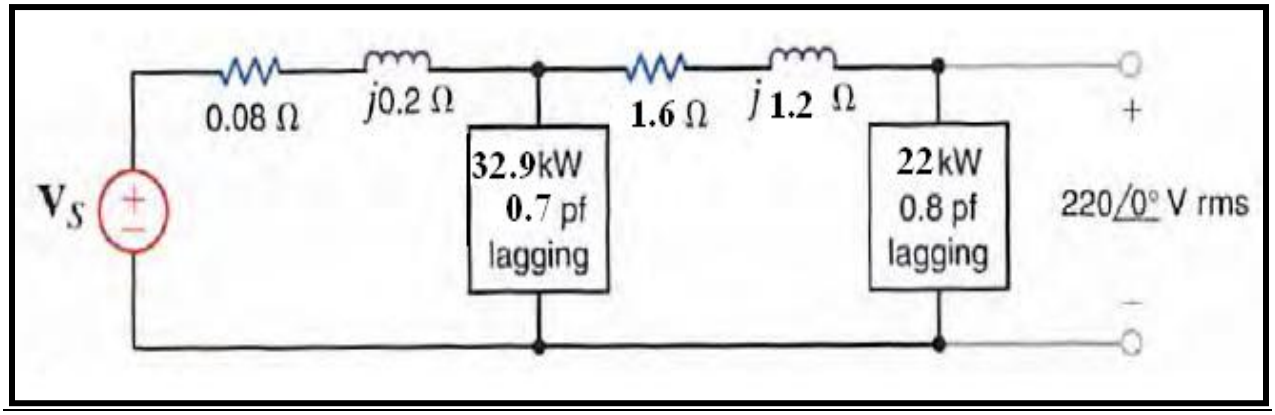

Figure Q3

Question Four [**20**%]

A three-phase positive sequence supplies **20KVA** with power factor **0.6** lagging to parallel combination of Δ connected and Y-connected loads. The Y-connected uses **10KVA** at reactive factor **0.6** lagging and has c-phase current of **25.7-j30.6** A

a. Find the a-phase line current
b. Find the impedance per phase of the Δ connected load
c. Find the magnitude of the line voltage
d. Draw the single phase equivalent for the a-phase

Question Five[15%]

Find ***n*** for maximum power supplied to the 80 Ω load.

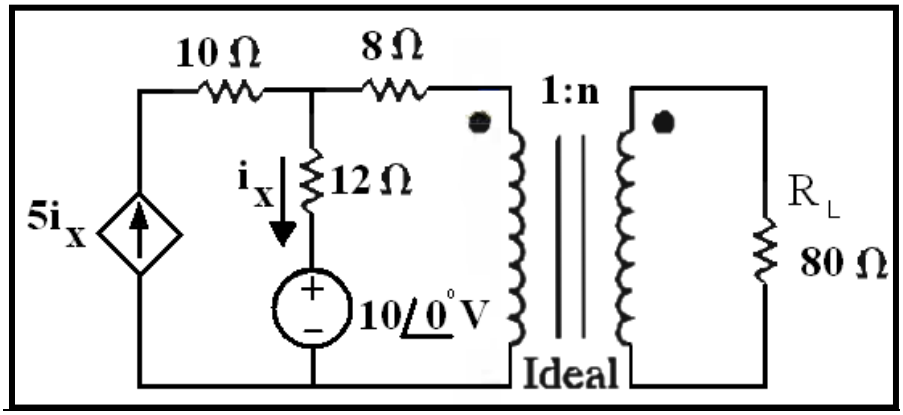

Figure Q5

Question Six [20%]

Find V_o in the following circuit in Figure Q6

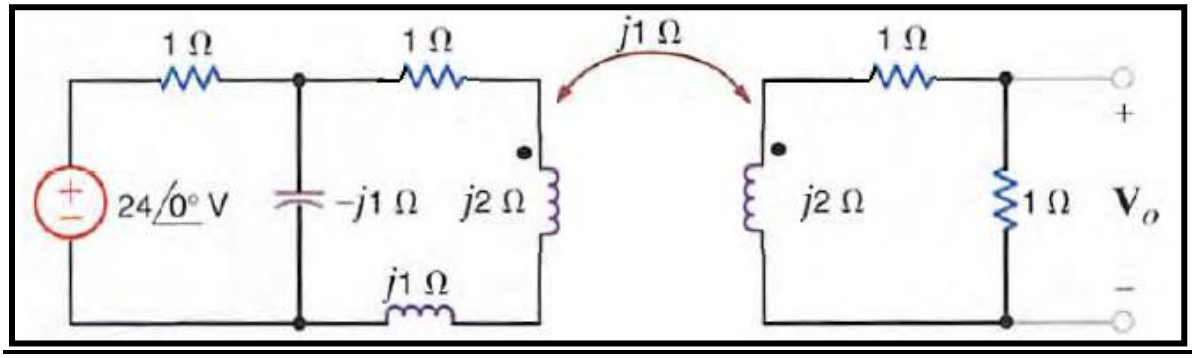

Figure Q6

END OF PAPER

Birzeit University
Faculty of Engineering
Electrical Engineering Department
Network Analysis I , ENEE 231
Final Exam

14 May 2012 **Mr. Hussein Zeitawi & Mr. Ashraf Al-Rimawi** **Time: 150 min**

Student Name: **ID Number:**

Instructions:
1. Closed book, closed notes, open-mind exam.
2. Write neatly and clearly for partial credit.
3. Cross out any material you don't want to be graded.
4. Work all problems in the exam booklets

Question #1 (20 Marks): For the circuit shown in figure 1 , find $\mathbf{v_x}$ using **Nodal Analysis** Only

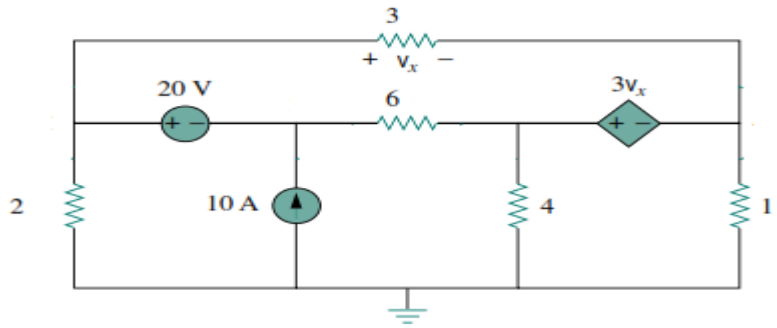

Fig 1

Question #2 (20 Marks_10 each): For the circuit as shown in figure 2

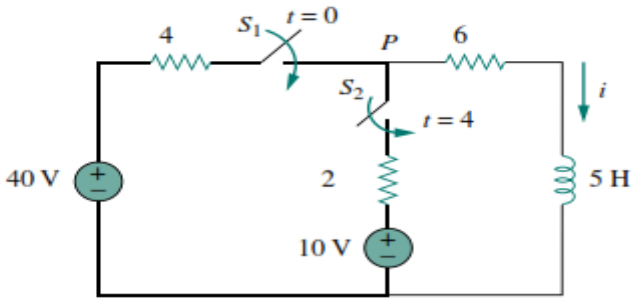

Fig2

a. Find i for $t \geq 0$
b. Calculate i for $t = 2$ sec, and $t = 5$ sec

Question #3 (20 Marks_10 each): The unbalanced -three phase loads shown in figure 3 is fed from balanced , positive (abc) sequence three phase Y-connected source, if $Z_A = 20\angle 30^0\Omega$, $Z_B = 60\angle 0^0\Omega$, $Z_C = 20\angle -30^0\Omega$.

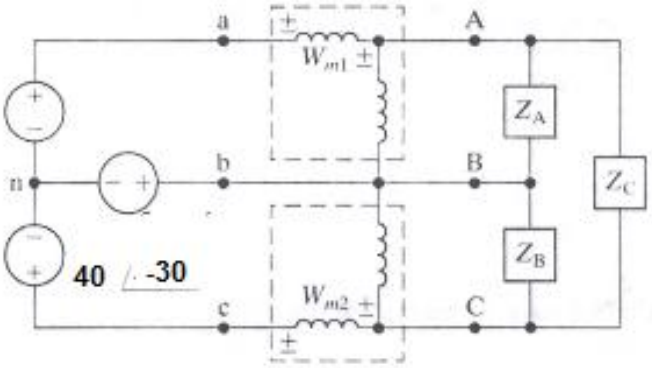

Fig 3

a. Calculate the reading of each wattmeter
b. Verify that the sum of the two wattmeter readings equals the total average power delivered to the load.

Question #4 (20 Marks):

Three 100 Vrms loads are connected in parallel. Load 1 is a 50 Ω resistor in series with an inductive reactance of 40 Ω. Load 2 absorbs an average power of 500 W at 0.75 lagging power factor. Load 3 absorbs an apparent power of 600 VA at 0.9 lagging power factor. Assume the circuit is operating at 60 Hz. Compute the value of a capacitor that would correct the power factor to 1 if placed in parallel with the loads.

Question #5 (20 Marks_10 each):

A) Find the impedance $\boldsymbol{Z_{ab}}$ in the circuit in figure 4 if $Z_L = 200 + j150\ \Omega$

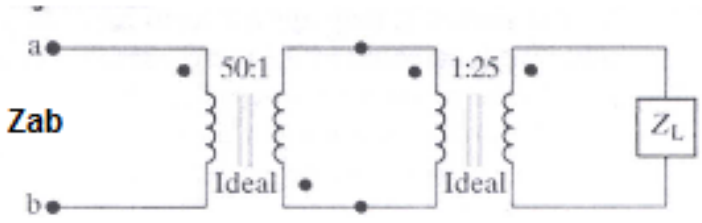

Fig 4

B) For the circuit in figure 5 , find $v_0(t)$ using **Source Transformation**