

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

Department of Electrical Engineering

EE 204 (062)

Major Exam II

May 15, 2007

6:30-8:00 pm

Duration 1 and 1/2 hours

Student Name :

Student ID# :

Instructor Name:

Select your instructor's name from the following:

Mr. Tasadduq (sections 1 & 2)

Dr. Bakhshwain (section 3)

Mr. Johar (section 4)

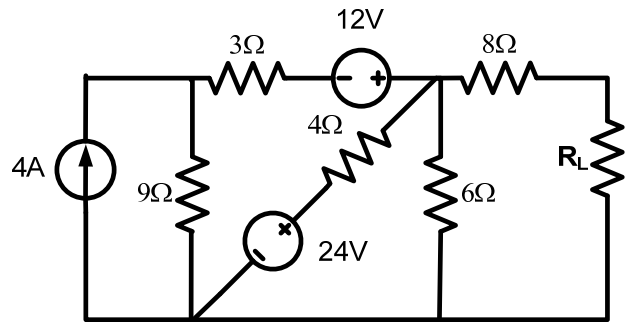
Dr. Al-Ahmari (section 5)

Dr. Alakhdhar (section 6)

	Maximum score	Score
Problem 1	25%	
Problem 2	25%	
Problem 3	25%	
Problem 4	25%	
Total	100%	

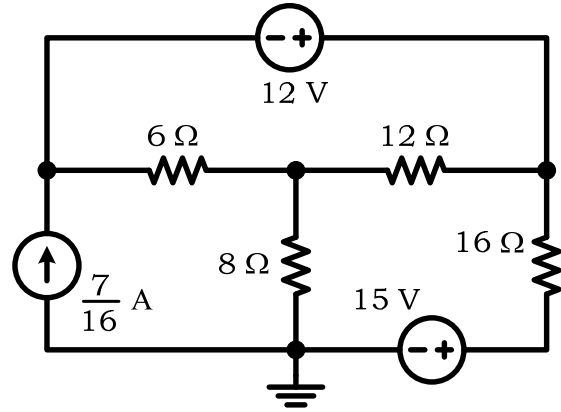
Problem 1 (25%):

- Determine the value of the resistor R_L **that absorbs maximum power** in the circuit shown.
- Calculate the maximum power that can be absorbed by R_L .



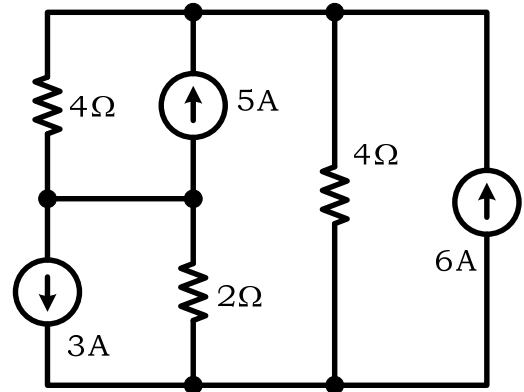
Problem 2 (25%):

Write and solve the node-voltage equations to determine the node voltages in the circuit shown.



Problem 3 (25%):

- a) **Write and solve the mesh-current equations** to determine the mesh currents in the circuit shown.
- b) Calculate the **power delivered by the 3A** current source in the circuit.



Problem 4 (25%):

Determine the current $\mathbf{i(t)}$ and the voltage $\mathbf{v(t)}$ in the following circuit **using superposition**.

