Ryerson University
Department of Electrical and Computer Engineering
ELE202: Electric Circuits Analysis
Final Examination, July 2010
Duration: 3 hours

Student's Name: .....

Student's Number: ..... Section: .....

NOTES:

1.This is a **Closed Book** examination. No aids other than the approved calculators are allowed.

2. All questions are of equal value.

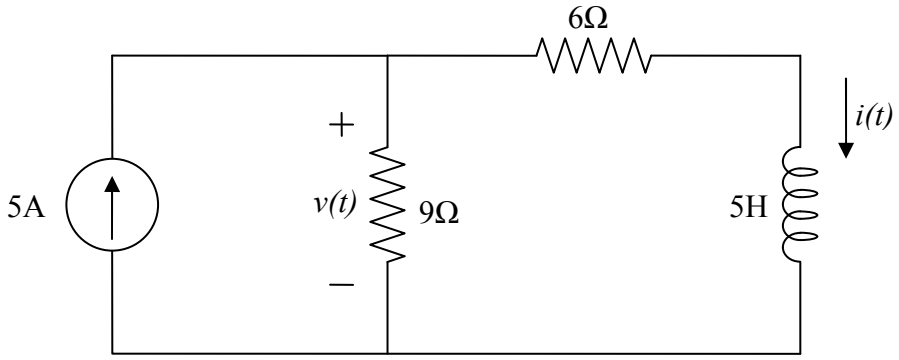
3.**No questions are to be asked**. If doubt exists as to the interpretation of any question, the student is urged to submit with the answer paper, a clear statement of any assumptions made.

Question No.	*Mark of each question*	*Mark obtained*
Q1	20	
Q2	20	
Q3	20	
Q4	20	
Q5	20	
Total (100)		

Q1: In the circuit shown below, the current through the inductor, *i(t),* is governed by the following equation:

$$i(t) = 3 + 2e^{-3t} \text{ A for } t \geq 0$$

Determine *v(t)* for $t \geq 0$.



***v(t)* =**

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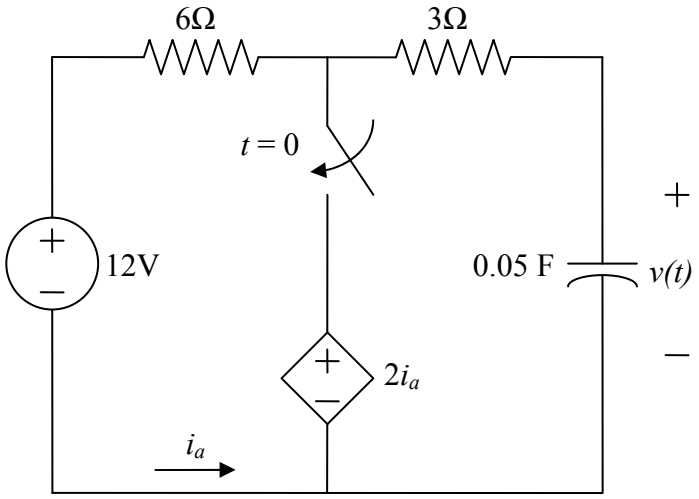
Q2: The following circuit is at steady state before the switch closes at time t=0. Determine the capacitor voltage, v(t), for $t \geq 0$.



***v(t)* =**

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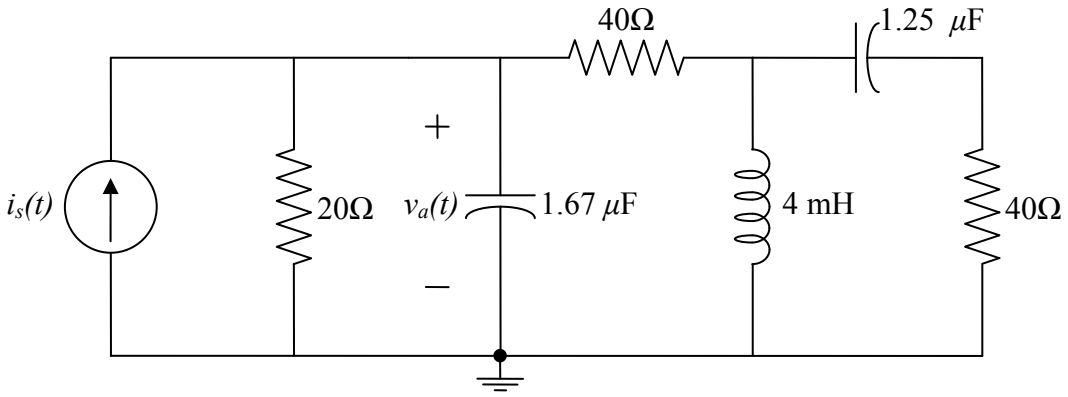
Q3: Determine the voltage $v_a(t)$ for the following circuit when

$i_s(t) = 20\cos(\omega t + 53.13^\circ)$A and $\omega = 10^4$ rad/s.



$v_a(t)$ =

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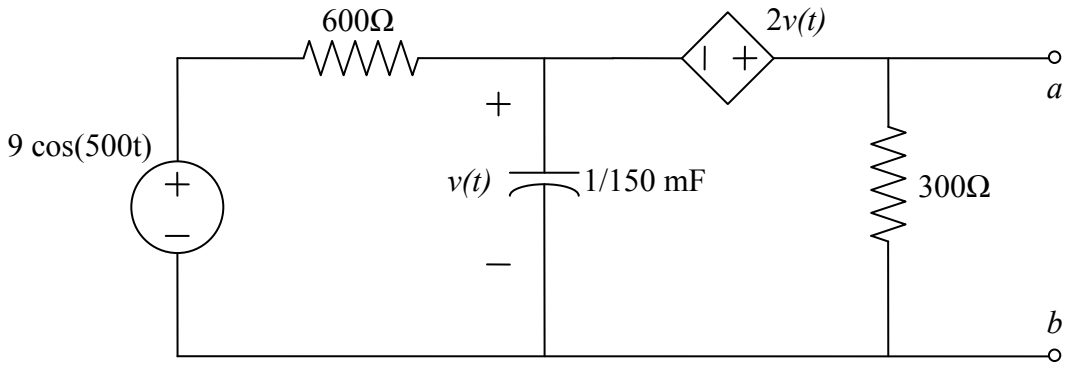
Q4: Find the Thevenin equivalent circuit between point *a* and *b* for the following circuit:



$\mathbf{V}_{th}$ =
$\mathbf{Z}_{th}$ =

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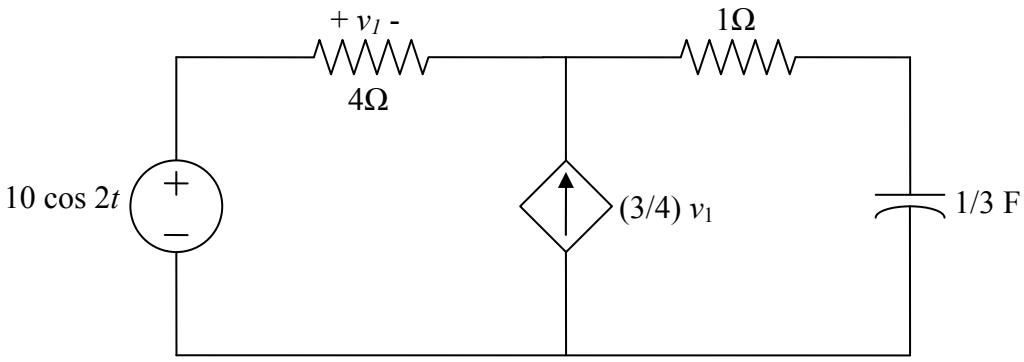
Q5: Find the complex power delivered by the voltage source and the power factor seen by the voltage source for the following source:



S =
pf =

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