

## Department of Electrical Engineering

### Assignment

Date: 13/04/2020

### Course Details

Course Title: Electrical Network Analysis

Module: 4th

Instructor: \_\_\_\_\_

Total 30

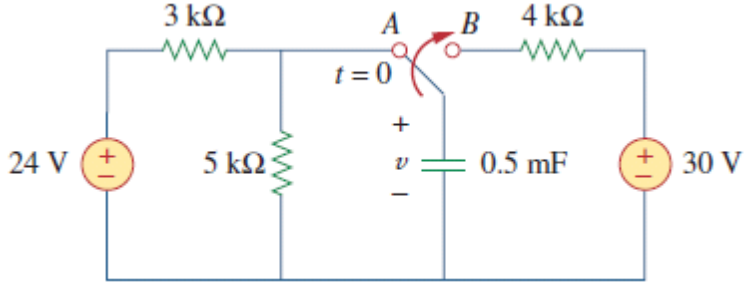
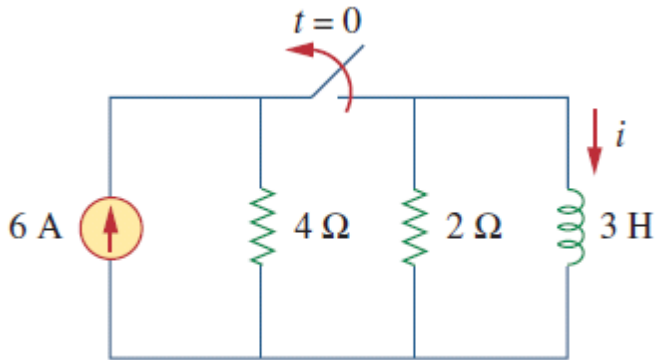
Marks: \_\_\_\_\_

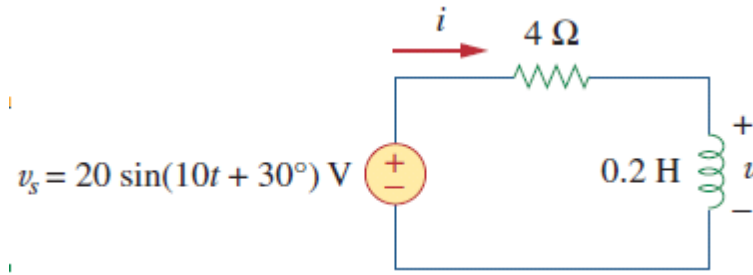
### Student Details

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Student Signature: \_\_\_\_\_

Q1.	<p>The switch in Fig. 1 has been in position A for a long time. At <math>t = 0</math> the switch moves to B. Determine <math>v(t)</math> for <math>t &gt; 0</math> and calculate its value at <math>t = 2\text{ s}</math> and <math>8\text{ s}</math>.</p> <div style="text-align: center;">  <p><b>Figure 1</b></p> </div>	<p>Marks 06 CLO 01</p>
Q2.	<p>Determine the inductor current for both <math>t &gt; 0</math> and <math>t &lt; 0</math> for the circuit in Fig. 2.</p> <div style="text-align: center;">  <p><b>Figure 2</b></p> </div>	<p>Marks 06 CLO 01</p>
Q3.	<p>A series RLC circuit is described by</p> $L \frac{d^2 i}{dt^2} + R \frac{di}{dt} + \frac{i}{C} = 10$ <p>Find the response when <math>L = 0.5\text{ H}</math>, <math>R = 4\ \Omega</math> and <math>C = 0.2\text{ F}</math>. Let <math>i(0) = 1</math>, <math>di(0)/dt = 0</math></p>	<p>Marks 06 CLO 01</p>

Q4.	A series RLC circuit has $R = 100\Omega$ , $L = 240\text{ H}$ and $C = 10\text{mF}$ . If the input voltage is $v(t) = 10\cos 2t$ , find the current flowing through the circuit.	Marks 06 CLO 03
Q5.	<p>Find <math>v(t)</math> and <math>i(t)</math> in the circuit shown in figure 3.</p>  <p style="text-align: center;"><b>Figure 3</b></p>	Marks 06 CLO 03