

GEORGIA INSTITUTE OF TECHNOLOGY  
School of Electrical and Computer Engineering

ECE 2040  
**Circuit Analysis**

Quiz #1

Monday, January 28, 2002

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

**GENERAL INSTRUCTIONS**

1. This is a *closed book, closed notes* exam. You may use a calculator if you choose.
2. Please do all of your work on the exam itself. You may use the backs of the pages, if necessary.
3. Please be as neat and well organized as possible.
4. Clearly indicate your answers.

<i>Problem</i>	<i>Max</i>	<i>Score</i>
1	25	
2	25	
3	25	
4	25	
Total	100	

**Problem Q1.1:** In the circuit of Figure 1 both inductors have no current flowing through them at  $t = 0$ .

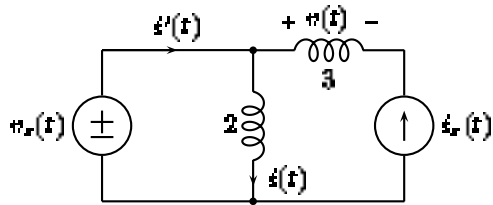


Figure 1: Circuit for Problem Q1.1.

(a) If

$$i_s(t) = \begin{cases} \sin 3t, & t \geq 0 \\ 0, & t < 0, \end{cases}$$

what is  $v(t)$ ?

(b) If

$$v_s(t) = \begin{cases} e^{-3t}, & t \geq 0 \\ 0, & t < 0, \end{cases}$$

what is  $i(t)$ ?

(c) What is  $i'(t)$ ?

**Problem Q1.2:**

**Problem Q1.3:**

**Problem Q1.4:**