ECS203 2015 HW2	Name:	ID:



## Sirindhorn International Institute of Technology Thammasat University at Rangsit

School of Information, Computer and Communication Technology

ECS 203: Problem Set 2

Semester/Year: 2/2015

Course Title: Basic Electrical Engineering

Instructor: Asst. Prof. Dr. Prapun Suksompong (prapun@siit.tu.ac.th)

Course Web Site: <a href="http://www2.siit.tu.ac.th/prapun/ecs203/">http://www2.siit.tu.ac.th/prapun/ecs203/</a>

Due date: Feb 1, 5 PM

## **Instructions**

- 1. Solve all problems. (5 pt)
  - a. Write your name and ID on the top of every submitted page.
  - b. For each part, write your explanation/derivation and answer in the space provided.
- 2. ONE sub-question will be graded (5 pt). Of course, you do not know which part will be selected; so you should work carefully on all of them.
- 3. There is no need to submit (or even print out) page 1 (this cover sheet).
- 4. Late submission will be rejected.
- 5. **Write down all the steps** that you have done to obtain your answers. You may not get full credit even when your answer is correct without showing how you get your answer.

## **Questions**

1) [Alexander and Sadiku, 2009, PP2.2] For the circuit shown in Figure 1, calculate the voltage v and the power p (dissipated by the  $10k\Omega$  resistor).

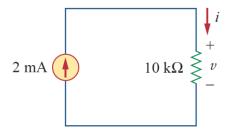


Figure 1

- 2) [Alexander and Sadiku, 2009, Q2.4]
  - a) Calculate current *i* in Figure 2 when the switch is in position 1.

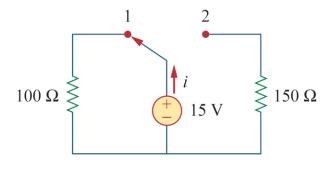


Figure 2

b) Find the current when the switch is in position 2.

3) [Alexander and Sadiku, 2009, Q2.7] Find the number of branches and nodes in each of the circuits of Figure 3.

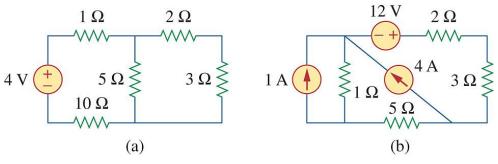


Figure 3

4) [Alexander and Sadiku, 2009, Q2.10] Determine  $i_1$  and  $i_2$  in the circuit of Figure 4.

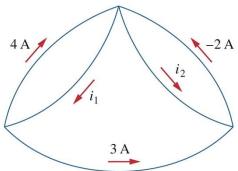


Figure 4

5) [Alexander and Sadiku, 2009, Q2.14] Given the circuit in Figure 5, use KVL to find the branch voltages  $V_1$  to  $V_4$ .

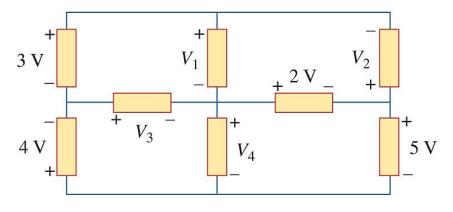


Figure 5