Color: Ivory

University of Arizona
Department of Electrical & Computer Engineering
ECE 220 Basic Circuits

Examination 2
March 5, 2015

Closed book/notes, calculators allowed up to level of TI89, TI Inspire, or HP50.

Part I: 6 questions
Part II: 6 questions
Part II is worth twice as much as Part I.

On the SCANTRON write and bubble-in your:

1. Name (Last, first)

2. Write the color of your exam paper (IVORY or GREEN) on the top left margin of the SCANTRON.

Show your UA picture ID card when you turn in your exam.

All work should be done on the examination paper. Allow for reasonable amounts of roundoff error, and carefully mark one choice for each problem on the SCANTRON answer sheet.

All answer sheets and examinations will be collected at 10:30. You will be asked to stop writing and hand in your papers/answer sheets. Failure to comply promptly may result in disqualification from the exam.

NAME: ________________________________

SIGNATURE: __________________________
Part I.

1. Find $i$.
   a) 0 A  
   b) 1 A  
   c) 2 A  
   d) 3 A  
   e) none of these

2. Find $v$.
   a) 2.5 V  
   b) 3.0 V  
   c) 3.5 V  
   d) 4.0 V  
   e) none of these

3. Find $R_{th}$ with respect to terminals $a$ & $b$.
   a) 2 Ω  
   b) 4 Ω  
   c) 6 Ω  
   d) 8 Ω  
   e) none of these
4. Find $v_{th}$ with respect to terminals $a$ & $b$.

- a) 2 V
- b) 3 V
- c) 4 V
- d) 5 V
- e) none of these

5. Find $v$.

- a) 1 V
- b) $-1$ V
- c) 2 V
- d) $-2$ V
- e) none of these

6. If $i = 2$ when $v = 1$, what value of $v$ will result in $i = 3$?

- a) 2 V
- b) 3 V
- c) $2/3$ V
- d) $3/2$ V
- e) none of these
Part II.

7. Find $i_N$ with respect to terminals $a$ & $b$.

a) 0.00 A  
b) 0.25 A  
c) 0.50 A  
d) 0.75 A  
e) none of these
8. Find $v$.

a) $-1 \text{ V}$
b) $7 \text{ V}$
c) $-14 \text{ V}$
d) $21 \text{ V}$
e) none of these
9. Find $v_o$.

a) $-1$ V
b) $2$ V
c) $-4$ V
d) $8$ V
e) none of these
10. Find $i$.

a) $0.72 \angle 153.43^\circ \text{ A}$
b) $1.44 \angle 153.43^\circ \text{ A}$
c) $1.44 \angle 76.72^\circ \text{ A}$
d) $0.72 \angle 76.72^\circ \text{ A}$
e) none of these
11. Find the maximum power that can be absorbed by $R_o$.

a) 50 mW  
b) 100 mW  
c) 200 mW  
d) 400 mW  
e) none of these
12. Find \( i \).

(a) 18 A  
(b) 9 A  
(c) 4.5 A  
(d) 2.25 A  
(e) none of these
Extra Credit Problems.

13. What is the ECE 220 class’s favorite color?
   a) chartreuse
   b) burgundy
   c) turquoise
   d) orange
   e) none of the above

14. What is the ECE 220 class’s favorite car?
   a) Tesla
   b) Lamborghini
   c) Ferrari
   d) Corvette
   e) none of the above
Answers: Ivory
1. b
2. c
3. a
4. b
5. b
6. d
7. d
8. d
9. b
10. b
11. c
12. a
13. c
14. e