

ECE 201 – Spring 2010

Final Exam

May 7, 2010

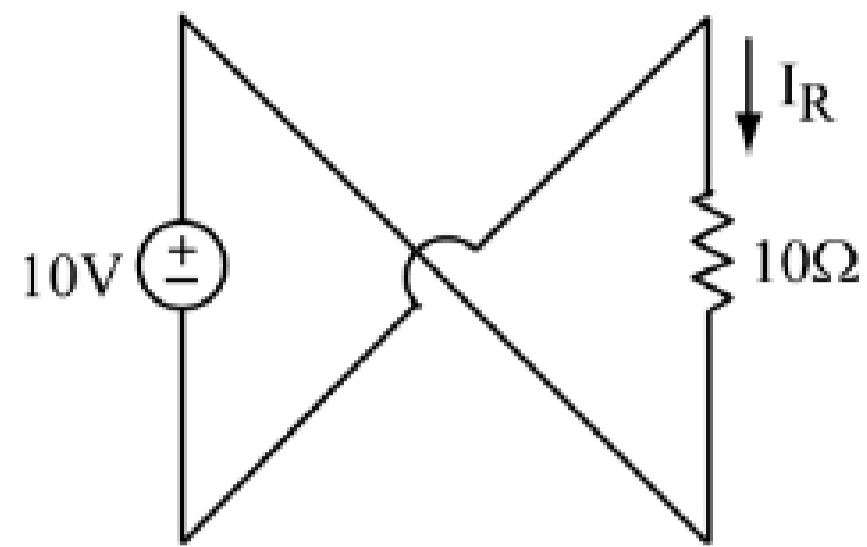
Division 0101: Prof. Capano (9:30am)
 Division 0201: Prof. Tan (10:30 am)
 Division 0301: Prof. Jung (7:30 am)
 Division 0401: Prof. Capano (11:30am)

Instructions

1. DO NOT START UNTIL TOLD TO DO SO.
2. Write your Name, division, professor, and student ID# (PUID) on your scantron sheet.
3. This is a CLOSED BOOKS and CLOSED NOTES exam.
4. There is only one correct answer to each question. Problem 1 is worth 5 points, Problem 2 is worth 6 points, and the rest of the problems are worth 9 points each.
5. Calculators are allowed (but not necessary). Please clear any formulas, text, or other information from your calculator memory prior to the exam.
6. If extra paper is needed, use back of test pages.
7. **Formulas are given on the final page of this exam.**
8. Cheating will not be tolerated. Cheating in this exam will result in an F in the course.
9. If you cannot solve a question, be sure to look at the other ones and come back to it if time permits.
10. As described in the course syllabus, we must certify that every student who receives a passing grade in this course has satisfied each of the course outcomes. On this exam, you have the opportunity to satisfy all outcomes. (See the course syllabus for a complete description of each outcome.) On the chart below, we list the criteria we use for determining whether you have satisfied these course outcomes. You only need to satisfy the outcomes once during the course, so any outcomes that you satisfied previously will remain satisfied, independent of your performance on this exam.

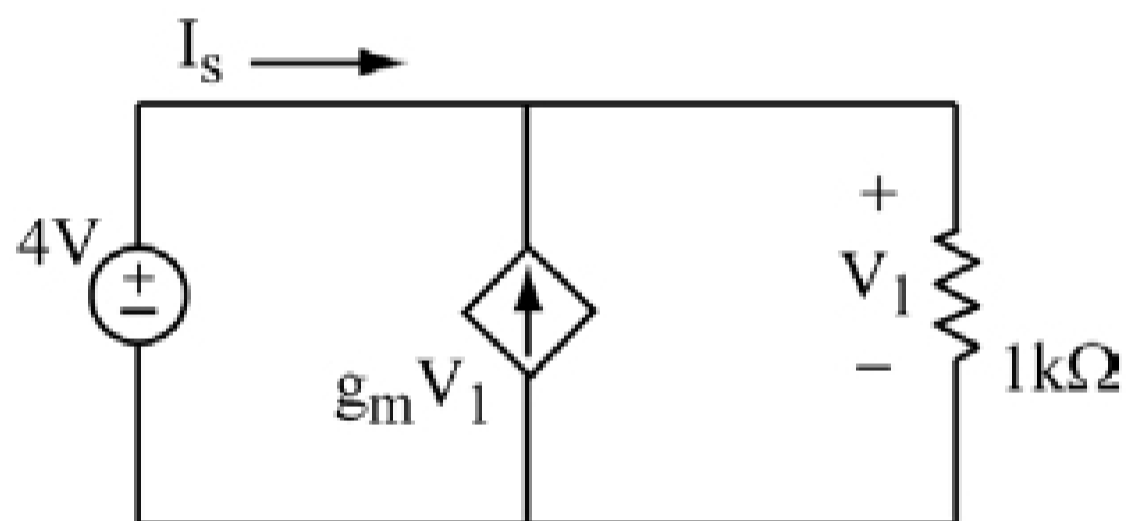
Course Outcome	Exam Questions	Minimum correct answers required to satisfy the course outcome
i	1, 2	1
ii	3	1
iii	4, 5	1
iv	6, 7, 8	1
v	11, 12, 13, 14, 16	2
vi	15, 17	1
vii	18, 19, 20, 21	2
viii	22, 23	1
ix	9, 10	1

1. (5pts) The current I_R in the circuit below is:



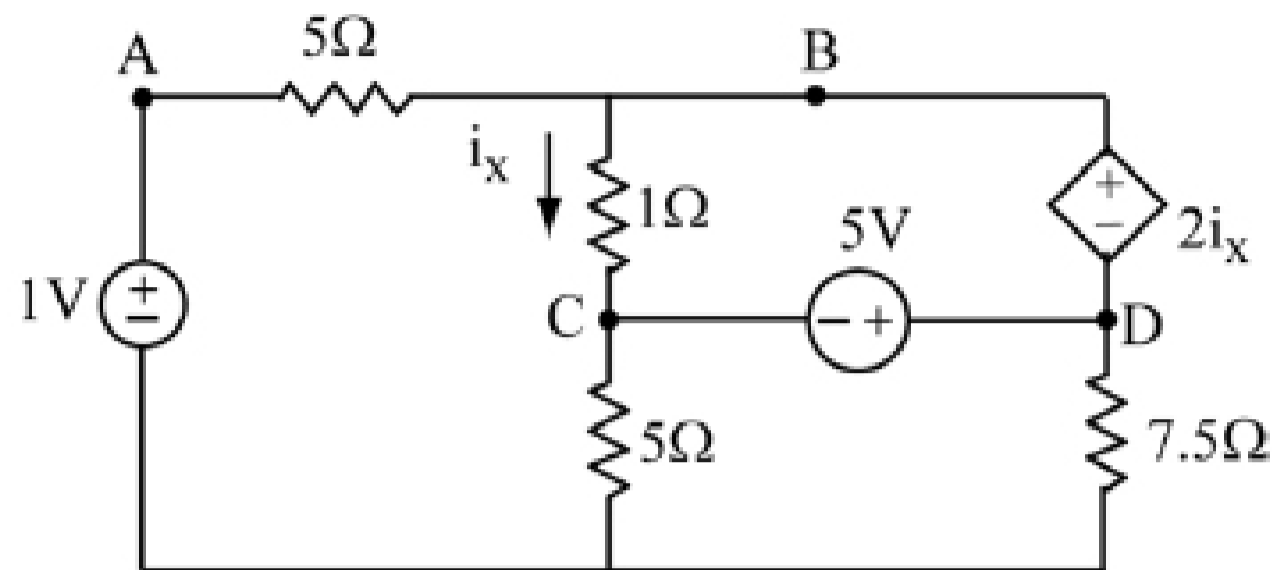
- (1) -10A (2) 10A (3) -100A (4) 100A
(5) -1A (6) 1A

2. (6 pts) If the transconductance (g_m) equals 0.002 S, find the current I_s .



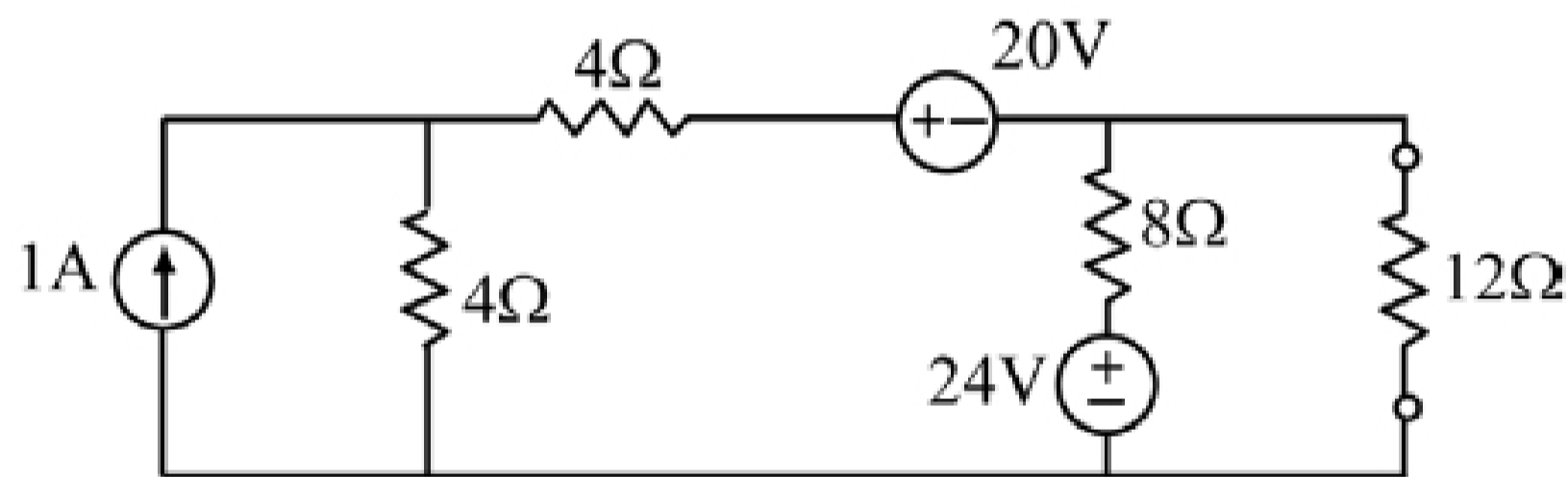
- (1) 1A (2) 2mA (3) -2A (4) -4mA
(5) 8mA (6) 4A (7) 0

3. (9 pts) Find the power delivered by the dependent source (in W) using nodal or mesh analysis.



- 1) 10 2) 20 (3) 30 (4) 40
 (5) 50 (6) 60 (7) 70

4. (9 pts) Using source transformation, find the power delivered to the 12 Ω resistor (in W)



- (1) 1 (2) 12 (3) 0.75 (4) 48
 (5) 0.5 (6) 0.0625 (7) 24