Alexandria University
Mid-term Exam, November 2015

جامعة الإسكندرية
امتحان نصف الفصل الدراسي الثاني (نوفمبر ٢٠١٥)

Course Title and Code Number:
Principles and Applications of Electrical Engineering (05211)
Second Year (Agricultural Engineering)
Time Allowed: One hour

اسم المقرر والرقم الكودي له:
مبادئ الهندسة الكهربية وتطبيقاتها (05211)
السنة الدراسية الثانية (هندسة زراعية)
الزمن: ساعة

Attempt All Questions: **(60 marks)**

1. In Figure 1, if $v_1 = v/8$ and the power delivered by the source is 8 mW, find R, v, v_1, and i.
2. Find the equivalent resistance between terminals a and b in the circuit of Figure 2.
3. Using **node voltage analysis** in the circuit of Figure 3, find the three indicated node voltages.
4. Using **mesh current analysis**, find the voltage, v, across the current source in the circuit of Figure 4.
5. Find the voltage, v, across the 3Ω- resistor in the circuit of Figure 5 by replacing the remainder of the circuit with its **Thevenin equivalent**.
6. Repeat problem 5 using **superposition.**

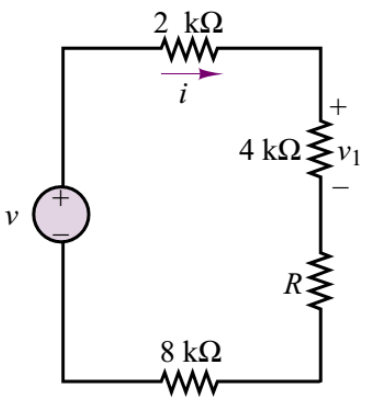

Figure 1

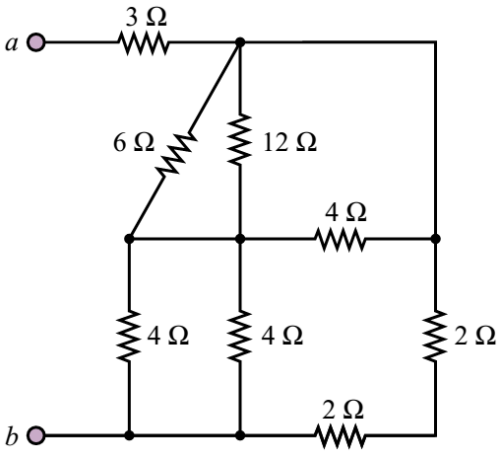

Figure 2

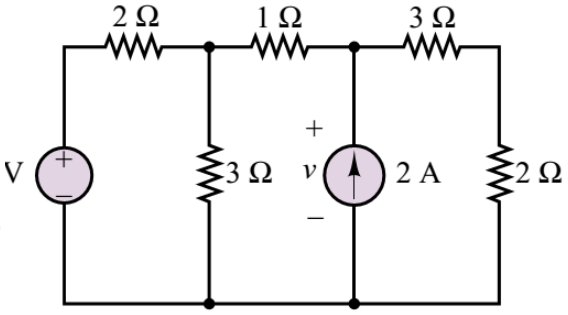

Figure 4

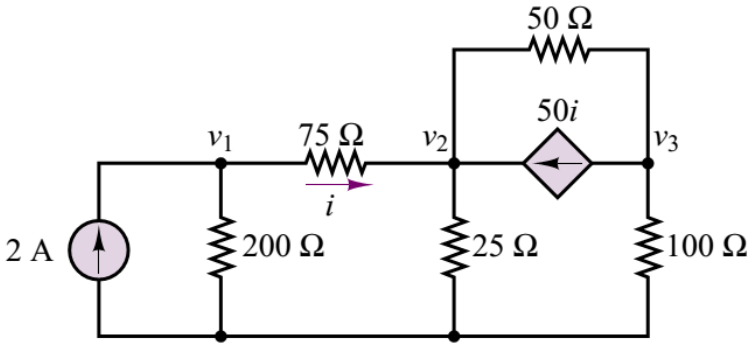

Figure 3

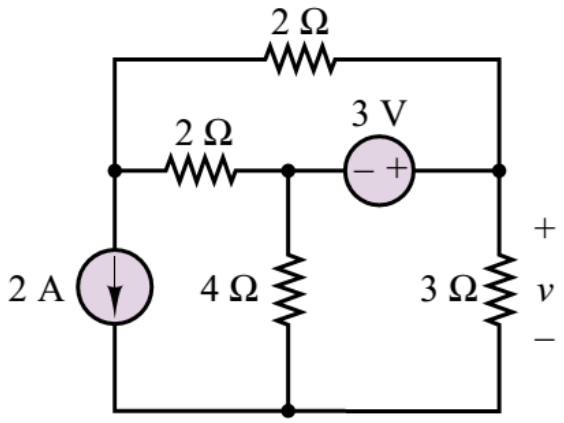

Figure 5

Good Luck

*Examiner**: Dr. Mohammed Morsy***