University of Jordan
Electrical Engineering Department
Electrical Engineering(EE 203)/ 1st Exam
(Form b)

20

Student Name (Arabic): الاسم الكامل
Student #: 0117[illegible]
Instructor: Eng. Reem Al-Debs
Section:

| 1 | 2 |
|---|---|
| 8.00 – 9.10 | 10.20 – 11.30 |

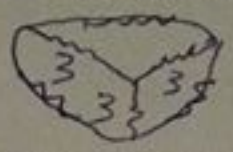
20

| | a | b | c | d | e |
|---|---|---|---|---|---|
| 1 | | | X | | |
| 2 | | | | X | |
| 3 | | X | | | |
| 4 | X | | | | |
| 5 | | | X | | |
| 6 | | | | X | |
| 7 | | X | | | |
| 8 | | | | X | |
| 9 | | X | | | |
| 10 | | | | X | |
| 11 | | | | | X |
| 12 | | | | | X |
| 13 | | X | | | |
| 14 | | | X | | |
| 15 | | | X | | |
| 16 | | X | | | |
| 17 | | | X | | |
| 18 | | | X | | |
| 19 | | | | | X |
| 20 | | | | | X |

## e most correct answer (one mark each)

ee 3Ω resistors are connected as Y connection. The equivalent delta connection consists of:

a. three 3Ω resistors
b. three 6Ω resistors
c. three 9Ω resistors
d. three 1Ω resistors
e. 3Ω, 6Ω and 9Ω resistors

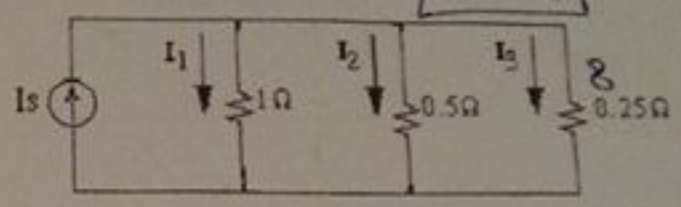


2. **If the voltage across a resistor is 0.3V, and R=200Ω, the current flowing through the resistor is:**

a. 60 A
b. 60 mA
c. 666.7 A
d. 1.5 mA
e. 1.5 μA

3. **For the circuit shown, use the current division law to find $I_s$ if $I_3$=8A:**

a. 8 A
b. 14 A
c. 2 A
d. 1.75 A
e. 32 A

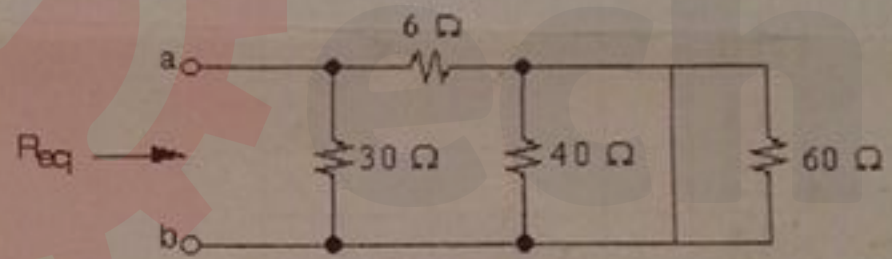



4. **Power absorbed by any resistor is considered:**

a. positive
b. zero
c. negative
d. could be positive or negative
e. None of the above

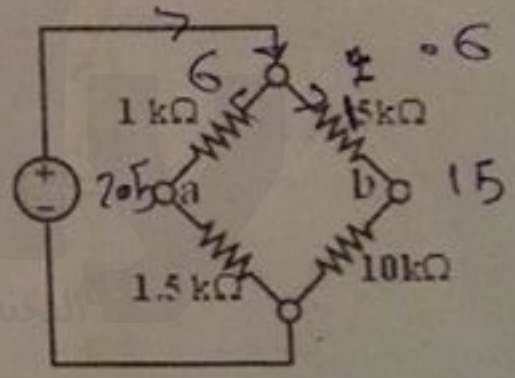
5. **The equivalent resistance $R_{eq}$ (in ohms) at terminals a and b in the following circuit is:**

a. 15 Ω
b. 18 Ω
c. 5 Ω
d. 60 Ω
e. 0 Ω



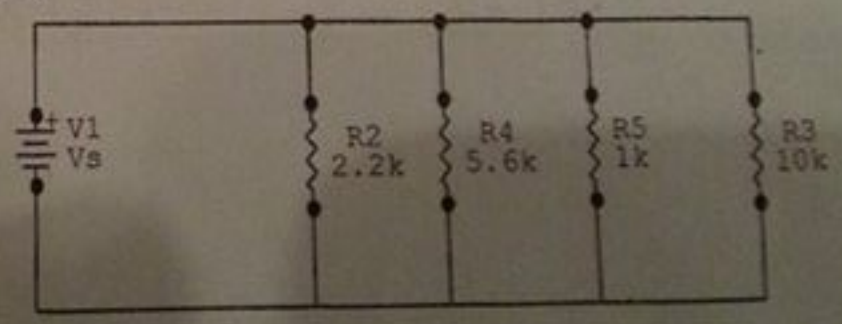

6. **$V_{ab}$ in the following circuit equals:**

a. 15 V
b. 6 V
c. 9 V
d. 3 V
e. 0 V

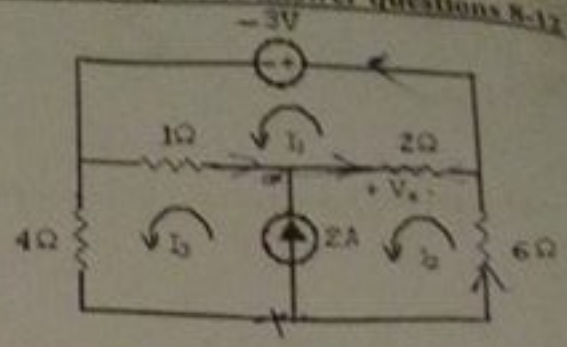



7. **For the following circuit, if $V_s \neq 0$:**

a. the maximum current pass through 5.6 kΩ
b. the maximum current pass through 1 kΩ
c. the maximum current pass through 10 kΩ
d. the maximum current pass through 2.2 kΩ
e. Vs is unkown, so we can not know



- **Use Mesh analysis in the circuit shown in the following figure to answer questions 8-12**




8. **Which of the following is correct equation:**
   a. $I_2 = -2$
   b. $I_3 = 2$
   c. $I_2 - I_3 = 2$
   d. $I_3 - I_2 = 2$
   e. $I_2 + I_3 = 2$

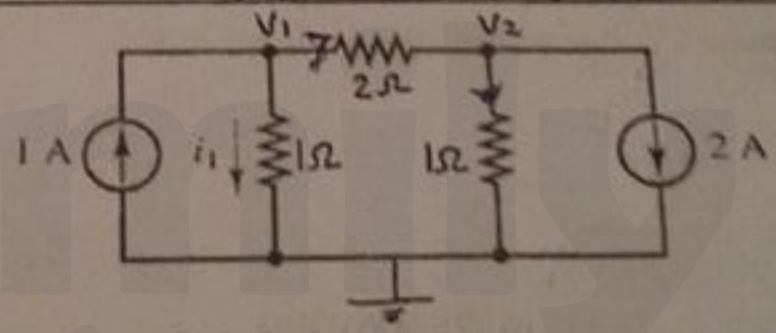
9. **The equation due to the first mesh is:**
   a. $I_1 = 3$
   b. $3I_1 - 2I_2 - I_3 = 3$
   c. $3I_1 + 2I_2 - I_3 = -3$
   d. $3I_1 = -3$
   e. $3I_1 = 3$

10. **The equation due to the super mesh is:**
    a. $8I_2 + 5I_3 = 0$
    b. $8I_2 + 5I_3 = 2$
    c. $-2I_1 + 8I_2 + 5I_3 = 3$
    d. $-3I_1 + 8I_2 + 5I_3 = 0$
    e. $-6I_2 + 4I_3 = 3$

11. **$V_x$ is:**
    a. $V_x = 2I_2$
    b. $V_x = 2I_1$
    c. $V_x = 2(I_2 + I_1)$
    d. $V_x = 2(I_2 - I_1)$
    e. $V_x = 2(I_1 - I_2)$

12. **The generated power by the (2A) source equals:**
    a. 20 W
    b. 32 W
    c. 13.2 W
    d. 11.88 W
    e. None of the above

- **Use Nodal analysis for the circuit shown in the following figure to answer questions (13-16)**



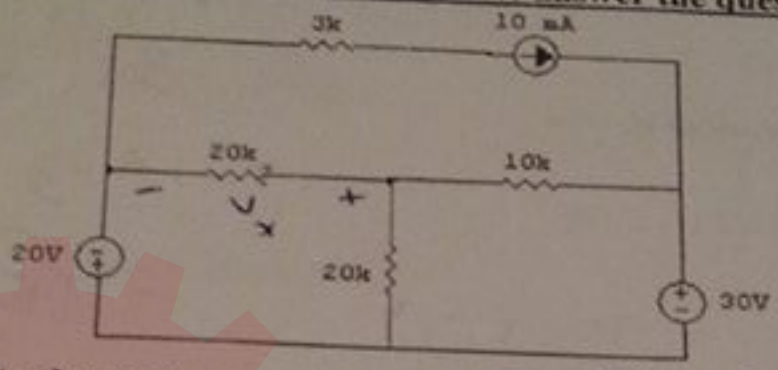

13. ***Nodal equation at node 1 is:***
    a. $V_1 - V_2 = 3$
    b. $3V_1 - V_2 = 2$
    c. $V_1 - 3V_2 = 3$
    d. $V_1 - 2V_2 = 2$
    e. None of the above

14. **Nodal equation at node 2 is:**
    a. $-V_1 + V_2 = 3$
    b. $V_1 - 3V_2 = 3$
    c. $V_1 - 3V_2 = 4$
    d. $V_1 - V_2 = 3$
    e. $V_1 + 3V_2 = 4$

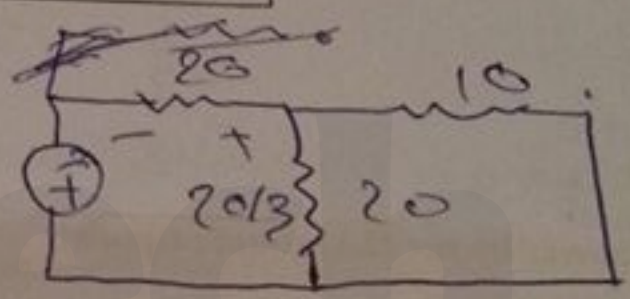
...x:
a. 0.5 A
b. 0 A
c. 0.25 A
d. 2 A
e. 4 A

16. The dissipated (absorbed) power by 2A source equals:
a. 2.5 W
b. -2.5 W
c. 1.25 W
d. -1.25 W
e. None of the above

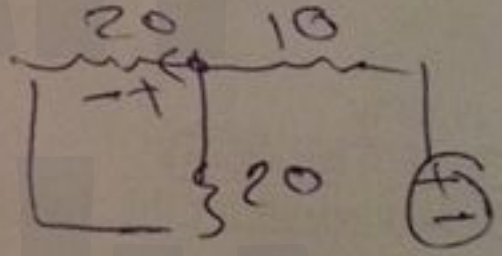
- **Use superposition Method in the following circuit to answer the questions (17-20)**



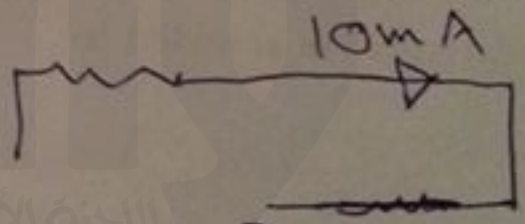

17. find the voltage $V_x$ due to the 20V source only:
a. 20 V
b. 10 V
c. 15 V
d. 12 V
e. None of the above




18. find the voltage $V_x$ due to the 30V source only:
a. 20 V
b. 10 V
c. 15 V
d. 12 V
e. None of the above




19. find the voltage $V_x$ due to the 10mA source only:
a. 10 V
b. 5 V
c. 20 V
d. 100 V
e. None of the above




20. find the voltage $V_x$ in the original circuit:
a. 35
b. 130
c. 22
d. 70
e. None of the above