

MY SO PRACTICE TEST

DIVISION C - HIGH SCHOOL, GRADES 6-9

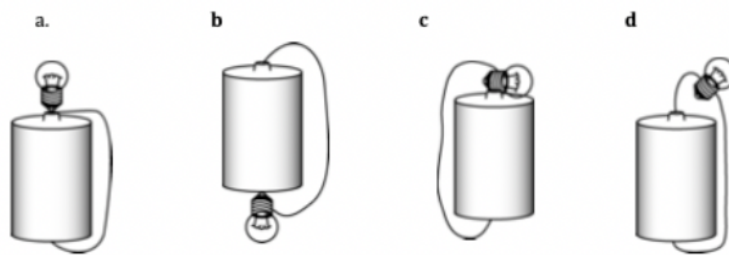
PRACTICE TEST

Instructions

- You have 20 minutes to complete this test.
- You may write your answers directly in the test.
- You may use any notes or resources you have created or collected.
- You may use a calculator and scratch paper if necessary.
- Good Luck!

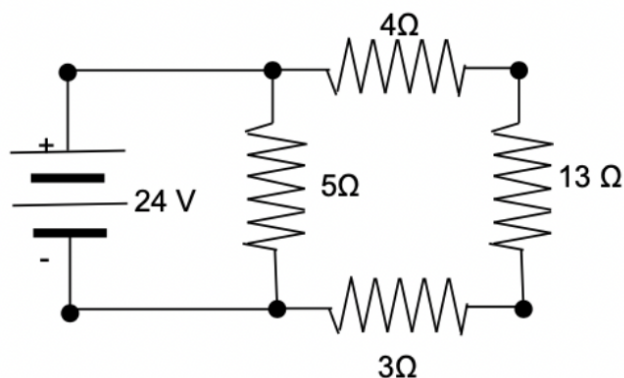
Test Questions

1. Which of the following is not a conductor?
 - a. Aluminum
 - b. Copper
 - c. Distilled Water
 - d. Sea Water
2. If you have four light bulbs all with different voltages and filaments of the same length, which one will have the thickest filament?
 - a. 10-W
 - b. 30-W
 - c. 60-W
 - d. 120-W
3. Which of the following is a unit of measure for resistance?
 - a. Ampere
 - b. Ohm
 - c. Volt
 - d. Watt



4. Which light bulb(s) in the image above are lit?
- Light Bulb A
 - Light Bulb B
 - Light Bulb C
 - Light Bulb D

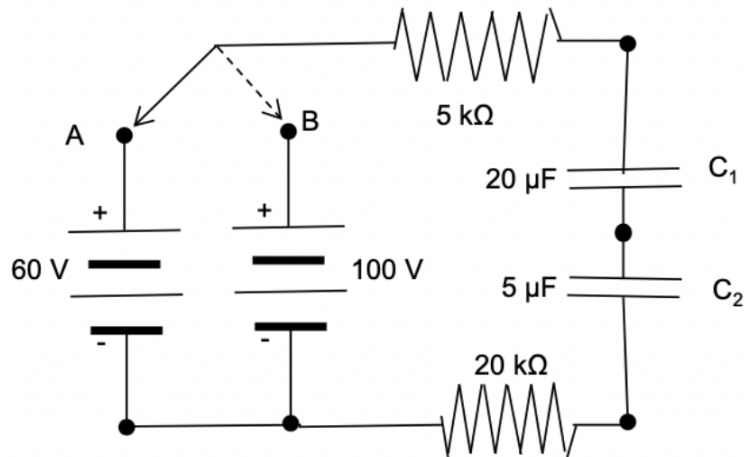
Use the following diagram to answer Question #5 - #7



5. What is the equivalent resistance...
- 2Ω
 - 4Ω
 - 8Ω
 - 16Ω
6. What is the power supplied by the voltage source?
- 24 W
 - 48 W
 - 124 W
 - 144 W
7. What is the current through the 3Ω resistor?
- 1.2 A
 - 3.0 A
 - 9.0 A
 - 12.0 A
8. Which of the following is a device used to measure current?
- Ammeter
 - Ampmeter
 - Potentiometer
 - Voltmeter

Use the following diagram to answer Question #9 - #14

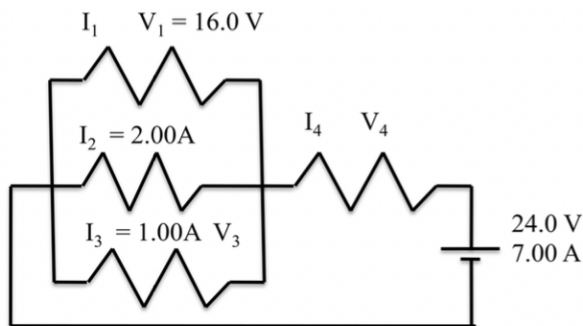
In the circuit below, assume the switch has been in position A for a long time and moves from A to B at $t = 0$ s.



9. What is the voltage across Capacitor 1 at $t < 0$?
 - a. 6 V
 - b. 12 V
 - c. 24 V
 - d. 48 V
10. What is the voltage across Capacitor 2 at $t < 0$?
 - a. 6 V
 - b. 12 V
 - c. 24 V
 - d. 48 V
11. What is the steady state voltage across Capacitor 1 at $t=1$ s?
 - a. 20 V
 - b. 40 V
 - c. 80 V
 - d. 160 V
12. What is the steady state voltage across Capacitor 2 at $t=1$ s?
 - a. 20 V
 - b. 40 V
 - c. 80 V
 - d. 160 V
13. What is the energy added to Capacitor 1 from $t=0$ to $t \gg 0$?
 - a. 0.00196 J
 - b. 0.00256 J
 - c. 0.01024 J
 - d. 0.01983 J

14. What is the energy added to Capacitor 1 from $t=0$ to $t \gg 0$?
- 0.00196 J
 - 0.00256 J
 - 0.01024 J
 - 0.01983 J
15. What is the source of all magnetism?
- tiny pieces of iron
 - ferromagnetic materials
 - moving electrical charge
 - tiny domains of aligned atoms
16. Which of the following is true for a bar magnet that has been cut in half?
- The pieces will no longer be magnetized.
 - Both pieces will be only the South Pole.
 - One piece will be the North Pole the other piece will be the South Pole.
 - Each piece will be a complete magnet with a North Pole and a South Pole.

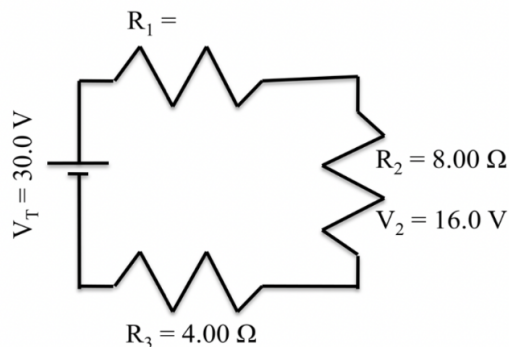
Use the drawing below to answer questions #17-#20



17. What is I ?
- 1.00 A
 - 3.00 A
 - 4.00 A
 - 7.00 A
18. What is V ?
- 4.00 V
 - 8.00 V
 - 16.00 V
 - 24.00 V
19. What is I ?
- 2.00 A
 - 3.00 A
 - 4.00 A
 - 7.00 A

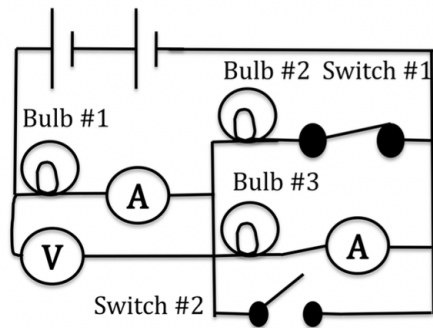
20. What is V_4 ?
- 4.00 V
 - 8.00 V
 - 16.00 V
 - 24.00 V

Use the drawing below to answer questions #21-#25



21. What is the current passing through Resistor R_3 ?
- 1.00 A
 - 2.00 A
 - 4.00 A
 - 7.50 A
22. What is the voltage drop across Resistor R_3 ?
- 6.00 V
 - 8.00 V
 - 16.00 V
 - 30.00 V
23. What is the current passing through the battery?
- 1.00 A
 - 2.00 A
 - 4.00 A
 - 7.50 A
24. What is the voltage drop across resistor R_1 ?
- 6.00 V
 - 8.00 V
 - 16.00 V
 - 30.00 V
25. What is the total resistance of the external circuit?
- 4.00 Ω
 - 12.00 Ω
 - 15.00 Ω
 - 30.00 Ω

Use the drawing below to answer questions #26-#30



26. How many batteries are present in the above circuit?
 - a. Zero
 - b. One
 - c. Two
 - d. Three

27. If only Switch #1 is open, what will happen to the current in Bulb #1?
 - a. Become Zero
 - b. Decrease
 - c. Become Greater
 - d. Stay the same

28. If only Switch #1 is open, what will happen to the current in Bulb #2?
 - a. Become Zero
 - b. Decrease
 - c. Become Greater
 - d. Stay the same

29. If only Switch #1 is open, what will happen to the current in Bulb #3?
 - a. Become Zero
 - b. Decrease
 - c. Become Greater
 - d. Stay the same

30. If only Switch #2 is closed, what will happen to the brightness of Bulb #3?
 - a. Become Brighter
 - b. Become Dimmer
 - c. Go Out
 - d. Stay the same

ANSWER KEY

- | | | | | | |
|-----|----------|-----|----------|-----|----------|
| 1. | C | 15. | C | 29. | C |
| 2. | D | 16. | D | 30. | C |
| 3. | B | 17. | C | | |
| 4. | B | 18. | C | | |
| 5. | B | 19. | D | | |
| 6. | D | 20. | B | | |
| 7. | A | 21. | B | | |
| 8. | A | 22. | B | | |
| 9. | B | 23. | B | | |
| 10. | D | 24. | A | | |
| 11. | A | 25. | C | | |
| 12. | C | 26. | C | | |
| 13. | B | 27. | B | | |
| 14. | B | 28. | A | | |