Name: _____ Class: _____ Date: _____ ID: A

4SW Test: Gravity/Electricity/Ohm's Law

Multiple Choice
Identify the choice that best completes the statement or answers the question.

____ 1. An object is said to be "in orbit" of another object when
a. an angel is pushing heavenly bodies in a prescribed circle
b. it folllows a continuous elliptical path of falling towards an object, but maintain their track around that object.
c. a satellite slowly falls into each other and disintegrates upon impact.
d. They leave Earth's atmosphere for the universe.

____ 2. The Earth's Tides are primarily caused by
a. The Earth is spinning on it's axis
b. The gravitational pull of the moon on the Earth's oceans
c. Two angel raise the water around the world twice daily on opposite sides
d. the gravitational pull of the sun on the Earth's oceans

____ 3. In projectile motion
a. an object with three times the mass will fall three times faster
b. an object with three times the vertical velocity will travel three times faster
c. an object with three times the horizontal velocity will travel three times farther
d. an object with three times the vertical velocity will travel three times farther

____ 4. Gravitational force is a force that acts between two _____.
a. velocities
b. charges
c. masses
d. electrons

____ 5. Calculate the Gravity between the Moon and the Sun. The moon has a mass of 7.36 x 10^22 kg. The sun ha a mass of 1.99 x 10^30 kg and the distance between the Moon and Sun is 1.49 10^11 m.
a. 4.38 E 20 N
b. 6.57 E 31 N
c. 6.58 x 10 ^ 30 N
d. 2.01 E 22 N

____ 6. What is the gravitaional force exerted by the 2kg mass on the 1kg mass that are 1m apart?
a. 5.21×10^{-10} N
b. 3.34×10^{-11} N
c. 1.34×10^{-10} N
d. 6.67×10^{-11} N

____ 7. As the mass of two objects increases by a factor of two (2 times), the gravitational force exerted _____.
a. decreases by 1/2
b. doubles, (2 times the gravity)
c. 4 times the gravity (squared)
d. remains constant.
e. decreases by 1/4 (inverse square)

Name: _____

____ 8. As distance doubles (2 times) between two objects, the gravitational force exerted _____.
a. increases by a factor of 2 (2 times)
b. increases by a factor of 4 (4 times)
c. decreases by a factor of 1/4
d. decreases by a factor of 1/2
e. remains constant

____ 9. As distance is reduced by half (1/2 times) between two objects, the gravitational force exerted _____.
a. increases by a factor of 2 (2 times)
b. increases by a factor of 4 (4 times)
c. decreases by a factor of 1/4
d. decreases by a factor of 1/2
e. remains constant

____ 10. The moving subatomic particles in electricity are also known as _____.
a. voltage
b. electrons
c. resistance in Ohms
d. power

____ 11. An Volt in electricity is the _____ in a circuit.
a. amount of push behind electrons
b. electrostatic force between two charges
c. semiconductors resistance to current
d. current

____ 12. An Ohm in electricity is the _____ in a circuit.
a. push behind electrons
b. electrostatic charge
c. semiconductor's resistance
d. current

____ 13. A _____ is a closed, conducting path.
a. circuit
b. conductor
c. insulator
d. electric charge

____ 14. A _____ is used to open or close a conducting path.
a. switch
b. resistor
c. ampmeter
d. power source

____ 15. If I want to **increase** the current in a wire, I should **increase** the
a. voltage
b. length
c. number of lights
d. resistance

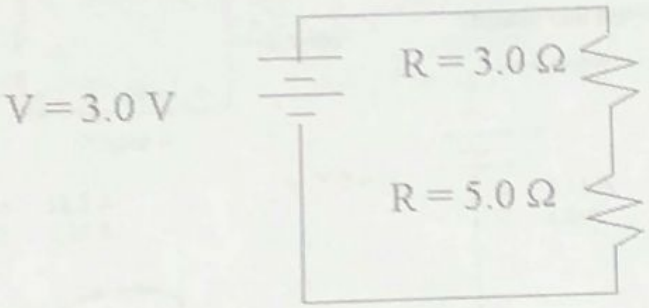
____ 16. If I want to **decrease** the current in a wire, I should **decrease** the
a. voltage
b. length of the wire
c. number of lights
d. resistance

Name: _____ ID: A

____ 17. A student plans to make this lightbulb glow. All of the following objects can be used to complete the circuit except -

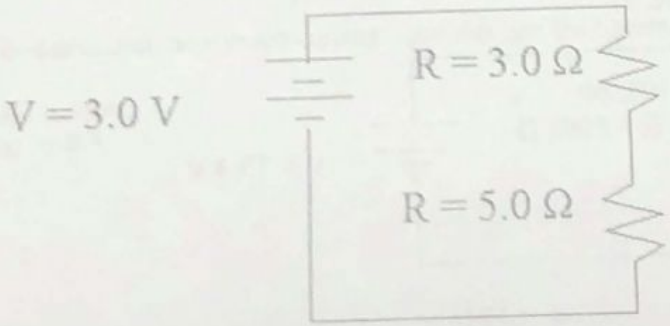
a. a plastic comb
b. a copper penny
c. a metal clip
d. an iron nail

____ 18. What is the current flowing through this circuit?



a. .38 A
b. 1.6 A
c. 5.0 A
d. 2.6 Coulombs / sec

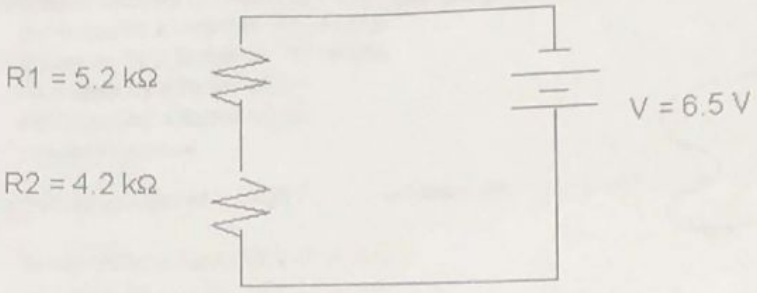
____ 19. What is the total resistance in this circuit?



a. 8.0 Ω
b. 2.0 Ω
c. 1.875 Ω
d. 0.533 Ω

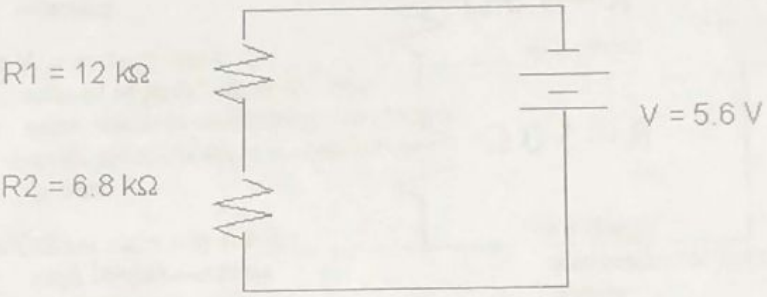
Name: _____

____ 20. How much current is flowing through this circuit?



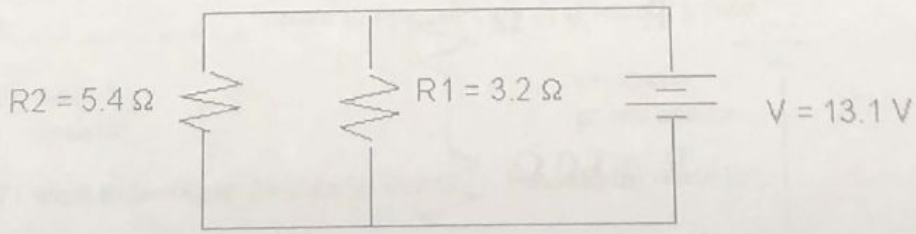
a. .691 mA
b. 6.91 mA
c. .291 Amps
d. 2.91 mA

____ 21. How much current is flowing through this circuit?



a. .692 mA
b. 6.92 mA
c. .000297 Amps
d. 2.97 mA

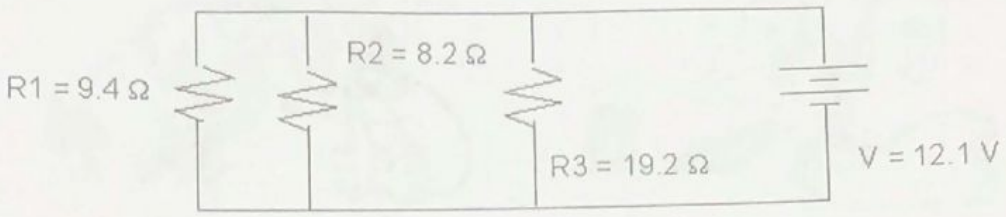
____ 22. What is the total resistance in this circuit?



a. 2.0 Ω
b. 8.6 Ω
c. .50 Ω
d. 4.5 Ω

Name: _____ ID: A

____ 23. What is the total resistance in this circuit?



a. 3.6 Ω
b. 37 Ω
c. .28 Ω
d. 4.6 Ω

____ 24. What is the current in the circuit shown in figure 1?

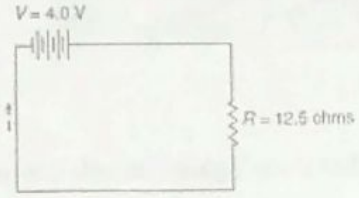
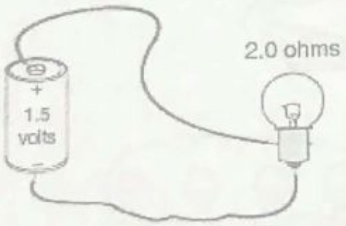


Figure 1

a. 12.5 A
b. 0.32 A
c. 3.13 A
d. 4.0 A



____ 25. In this circuit, how much current flows through the lightbulb?

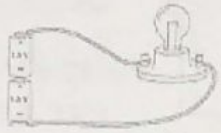
a. 1.33 A
b. 3.0 A
c. 1,000,000 A
d. 0.75 A

ID: A

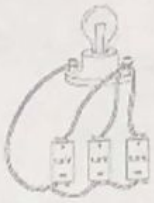
Name: _____

____ 26. Which one of the circuits below will NOT cause the lightbulb to start glowing?

a.

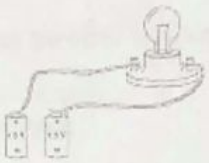


c.



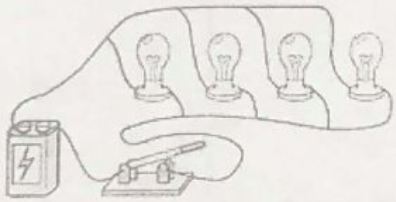
b.

d.

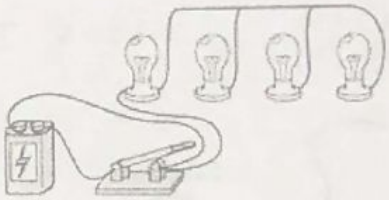


____ 27. Which circuit is built so that if one lightbulb goes out, the other three lightbulbs will continue to glow?

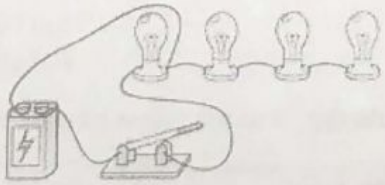
a.



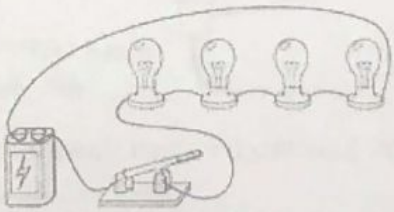
c.



b.

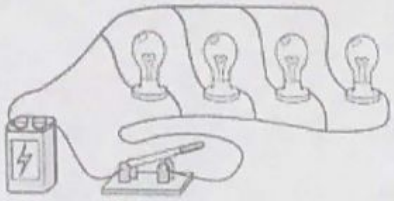


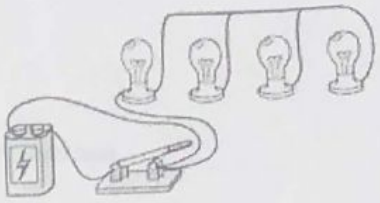
d.

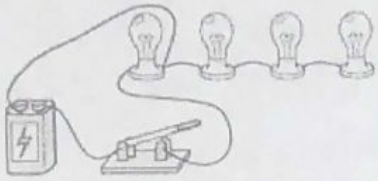


Name: _____ ID: A

___ 28. Which circuit is built with the lightbulbs in series?

a. 

c. 

b. 

d.