

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. Draw the following circuit elements (4pts):

a) Battery

b) Resistor

c) Open Switch

d) Voltmeter

2. True or False? Put a T on the line for true and an F on the line for false (8pts)

a) When a switch is closed, the circuit is powered on \_\_\_\_

b) The unit of measure for current is Amperes \_\_\_\_

c) Ammeters are used to measure voltage in a circuit \_\_\_\_

d) Current and electrons flow in the same direction \_\_\_\_

e) Electrons flow out of the negative end of the battery \_\_\_\_

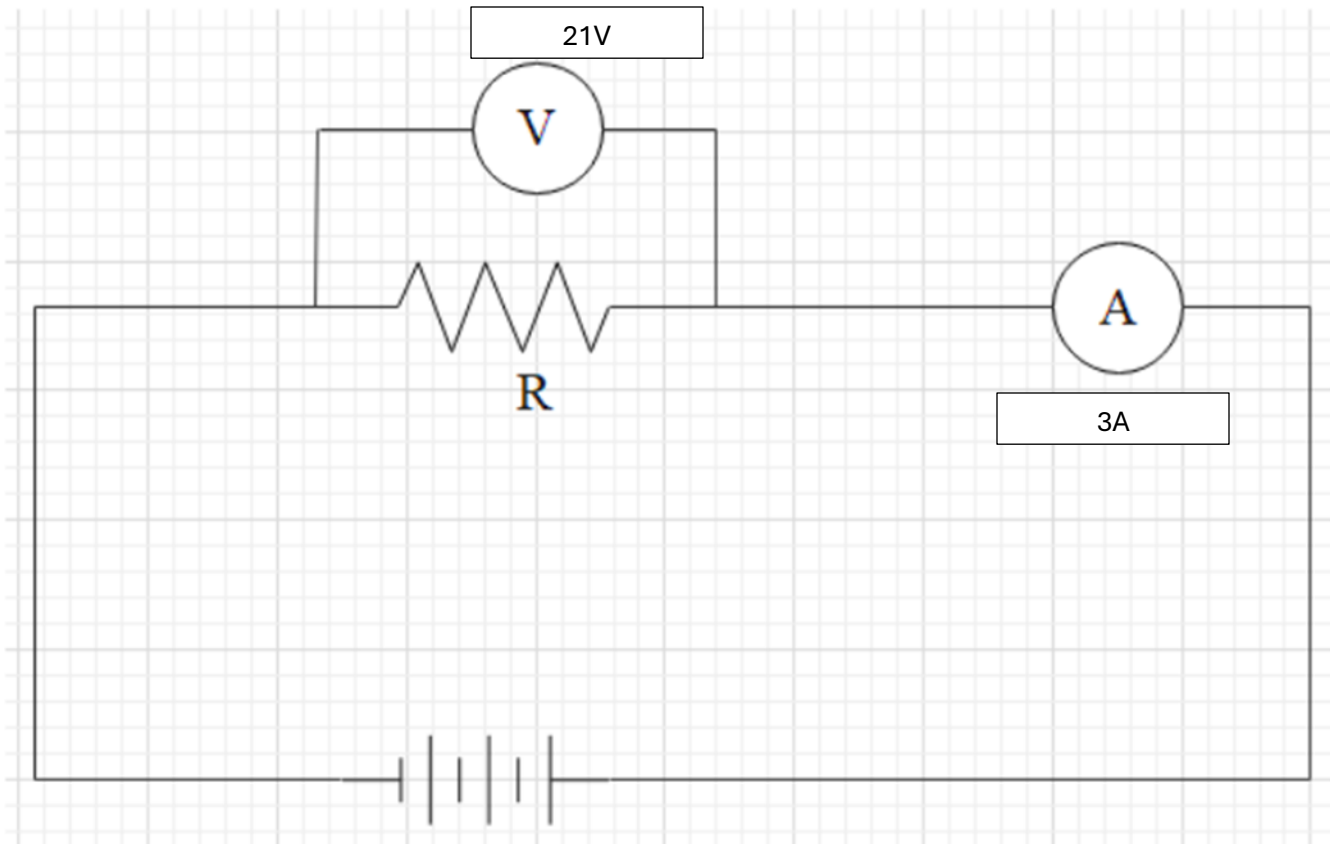
f) Resistors slow down current and electron flow in a circuit \_\_\_\_

g) The symbol for ohms is the letter O \_\_\_\_

h) There are 1000 joules(J) in 1 kilojoule(kJ) \_\_\_\_

3. Answer the following questions about the circuit

*Please show your work, I can give partial marks if final answer is wrong*



a) Draw an arrow in the direction of current (1pt)

b) Draw an arrow in the direction of electron flow (1pt)

c) What is the resistance of the resistor? (3pts)

d) How much energy is required to move 200C of charge? (3pts)

e) After 5 minutes, how much charge moves through the resistor? (3pts)

#### 4. Bonus Questions

*\*Optional – Can use the extra points on this test or on future work\**

a) Explain the law of attraction and repulsion (1pt)

b) What are conductors and insulators? How are they different? (1pt)

c) Write the answer to 3d) in both joules and kilojoules (1pt)