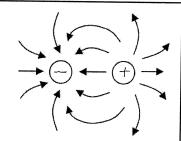
Electricity In Class Review

1. A) A 24 μC charge and a –1.2 μC are 6 mm away from each other. Calculate the force between them.

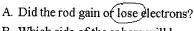
 $F = 9 \times 10^{9} \left(\frac{24 \times 10^{-6} \times 1.2 \times 10^{-6}}{1.2 \times 10^{-6}} \right) = 7200 \text{ N}$

- B) Will the two charges attract or repel each other?
- C) If the 24 µC charge touches ground what will happen? elections flow to it from ground
- D) If the distance between them is doubled, by how much does the force change? 14 (r is se.)
- E) If one of the charges was halved, by how much does the force change?
- By the direction of the electric field, decide if the charges are positive or negative. 2ttract
- 7. When do two charges attract each other? OOP. Charges

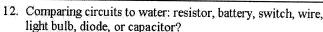


metal_

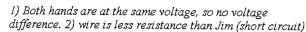
9. A positively charged rod is brought close to a conducting sphere.



B. Which side of the sphere will be negative? Jeft



- A. bətkry A water pump.
- B. wire A pipe.
- C. Switch A valve or faucet.
- D. Isht A water wheel (does something useful).
- E. capac. A water tower (gives temporary pressure).
- F. resis A restriction in a pipe.
- G. Jiode A one-way valve.
- 14. Slim Jim falls off of a building and grabs onto a power line to save himself.
 - A. Give two reasons why he is safe.

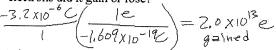


- B. Why would touching the ground be bad? Then there is a difference of voltage - ouch!
- 15. Fuse or circuit breaker?
 - A. C Can be reset.
 - B. Both Protects against too much current.
 - C. Fuse Must be replaced.

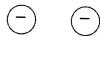
- If an object is negative, did it gain or lose electrons?
- How much charge do 25 electrons have?

$$\frac{25e}{|e|} = 4 \times 10^{-18}$$

 An object has a charge of -3.2μC object. How many electrons did it gain or lose?



- 5. Why can an object not gain a charge equal to 15.6 electrons?
- can't have part ofe
- 8. A. Will the two charges attract or repel each other?
 - B. To increase the potential energy between the two charges, should you pull them apart or push them together?



- 10. Decide which of the wires has the most resistance.
 - A. A wire at 5°C OR a wire at 15°C.) hotter
 - B. A thick 2m wire OR a thick 2cm wire. longer
 - C. A thick 2cm long wire OR a(thin 2cm long wire?
 - D. A wire made of silver OR a wire made of copper?
- 11. What do we call a substance with no resistance at very low temperatures? Superconductor
- 13. Draw a circuit with 2 batteries, a switch, and two light bulbs in series.



16. Which switches would need?

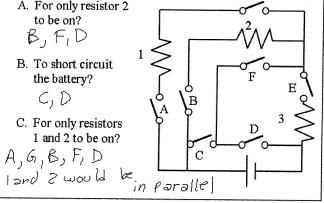
A. For only resistor 2 to be on?



B. To short circuit the battery?

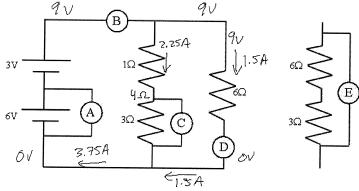


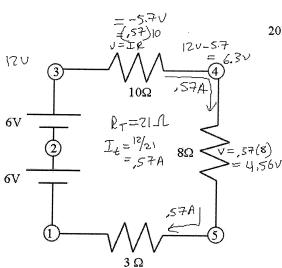
C. For only resistors 1 and 2 to be on?



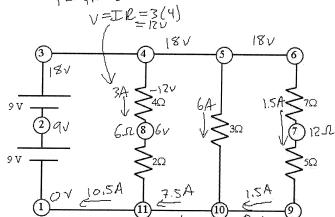
Electricity In Class Review

- 17. A. Electricity is moving electrons. B. Why can't protons move? Trapped in nucleus by strong nuclear force.
- 18. Voltage <u>pushes</u>, current <u>flows</u>, and resistance <u>restricts</u> the flow of current.
- 19. Ammeter, voltmeter, or ohmmeter?
 - A. Meter A: volt3
 - B. Meter B: ammeter
 - C. Meter C: volts
 - D. Meter D: 2mmoter
 - E. Meter E: ohmmeter
 - F. What does Meter A read? 6 V
 - G. What does Meter D read? 1.5A
 - H. What does Meter B read? 3.75A
 - I. What does Meter E read? 9 1





- 20. Use the circuit at the left to answer the following.
 - A. Is it a series or parallel circuit?
 - B. If the 10Ω resistor is removed, how would the current change? increase everywhere
 - C. If one of the batteries is replaced by a 3V battery, how would the current change? Lectresse everywhere
 - D. Itotal = ,57A = 12/2)
 - E. What is the voltage used by the 10Ω resistor? 5.7 Volt5 = I R
 - F. Vat 4? 17-5,7=6.30
 - G. P80? = VI V=IR=,57(8)=4,56 P=4,56(,57)=2,6W



K.
$$P_{total} = V I$$

$$= |S(10.5)$$

- 21. Use the circuit at the right to answer the following.
 - A. Is it a series or parallel circuit?
 - B. $V_{\text{difference from 2 to 5}} = q_{1/2}$
 - C. What is the total resistance between points 4 and 11 (branch 1)? 6 Sh
 - D. I_{thru point 8} =
 - E. If the 4Ω resistor was removed, how would the total current change? in cresse
 - If branch 3 was broken at point 7, how would the current flowing thru the 4Ω resistor change? no change
 - G. $I_{\text{from } 10 \text{ to } 11} = 7.5 \text{ A}$
 - H. Itotal = 10.5A
 - $R_{\text{total}} = 1.71\Omega$ $V = IR \quad |8 = |0.5(R)$
 - J. $V_{\text{at point 8}} = \sqrt{2}$