In Class Review

1. A 2.2 μC charge and a –1.2 μC are 6 mm away from each other. Find the force between them.

2. Regarding #1: will they attract or repel?
3. If they touch each other what will happen?
4. If the 2.2 μC charge touches ground what will happen?
5. If the –1.2 μC touches ground what will happen? (different from #4)
6. If your electric company's power rate is $.06 per kWhr, find out how much it costs to run a 70w light bulb for two and a half days.

7. Multiply by hand using these steps: $\frac{(6 \times 10^{-4})(4 \times 10^{8})}{(8 \times 10^{12})} =$

A. Multiply the top: B. Simplify the number (not the 10s) C. Bring bottom to top. D. Final answer:

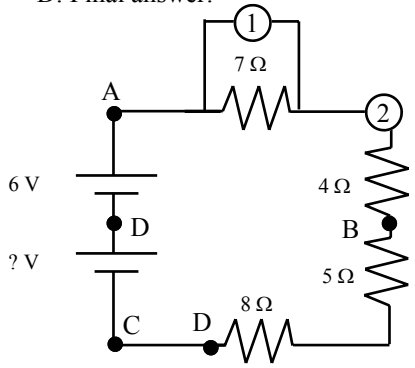
8. Use circuit A to answer the following:

A. If the current running through the 7 Ω is 0.5A, what is the current through the 4 Ω?

B. Find the second battery's voltage.

C. Find the voltage drop across the 5 Ω resistor.

D. Find these voltages: V_A = _____; V_C =_____; V_D = _____;V_{DA} = _____;V_{CD} = _____;



12. How much power does the 8 Ω use?

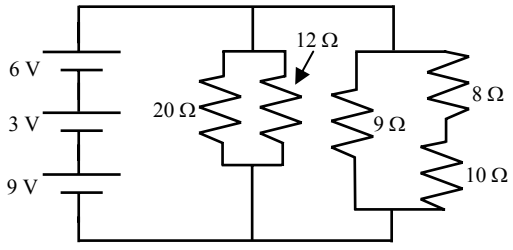
11. How much voltage causes a 6 C charge on a 6μF capacitor?

12. Find out how many electrons are LOST OR GAINED on the above capacitor.

13. Find the total voltage in this circuit.

14. Find the current in the 8 Ω resistor.

15. Find the total resistance in the circuit.



16. Find the total power used in the circuit.

17. If the circuit runs for 30 seconds, how much charge moves?

18. How much charge do 3.24×10^4 electrons have?

19. What is electricity?

20. What is voltage, current, and resistance?

21. Label the graphic to show the forces (repel or attract).

22. What is ground?

23. When a positive touches ground what happens?

24. Describe IN DETAIL: why the metal leaves of the electroscope move apart when the balloon came close (3 parts)?

25. Van de Graff questions:
    A. Why does a person's hair stand up when they are touching the Van de Graff?

    B. This area around their head is called their:

    C. Would their hair stand up if they were touching ground?

26. Acid or Base or Neutral:
    A. Make OH– ions in water.
    B. Have a pH less than 7
    C. Make H+ ions in water.
    D. You would add this to raise the pH
    E. Salt water
    F. pH of 7
    G. Add this to lower pH
    H. Vinegar
    I. Soap
    J. Feels slippery
    K. Distilled water
    L. Equal # of H+ and OH– ions

27. Show which way charge will move on the following:

-3.3C	-2.3C

0 C	-2.3C

-3.3C	5.3C

28. Do protons move?
29. Why or why not?

30. If you increase voltage, the current will increases or decreases?
31. If you decrease resistance, the current will increase or decrease?
32. If current increases, the resistance increased or decreased?

33. Which of the following pairs has the greatest resistance?

A 25 Ω at 5^o C Or a 25 Ω at 15^o C	55 Ω on a 2 m wire Or 55 Ω on a 2 cm wire	Thick wires OR Thin wires	A silver wire OR A copper wire

34. Which meter is delicate?

35. What is a substance with no resistance at low temperature?

36. What kind of current fluctuates?

37. Which is a battery?

38. If you put a 2 Ω and a 5 Ω light in parallel, which one will be brighter?
39 . Why? (Use the power equation as proof.)

40. Draw the electric field lines for the two charges.

41. Electroscope: Why did the leaves fly apart (3 parts)?

42. The process of DNA splitting and forming mRNA:

43. The process of mRNA making tRNA in the _____ is called:

44. Given this sequence: ATGGCACG, give the sequence for the opposite (complementary) DNA strand:

45. Given this sequence: GCGATACC, give the sequence that will form on mRNA.

46. What we call solutions that are conductors?