Name: _____

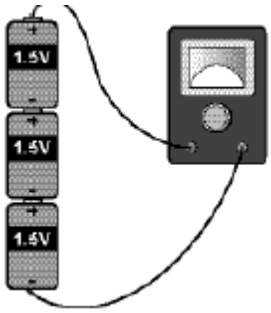
Final Exam Study Guide

Vocabulary: Define the terms in the space below, if it applies, draw a picture.

Vocabulary Word	Definition	Picture
Amplitude		
Wavelength		
Frequency		
Medium		
Current		
Resistance		
Conductor		
Ohm's		
Voltage		
Propagates		

Electric Measurements:

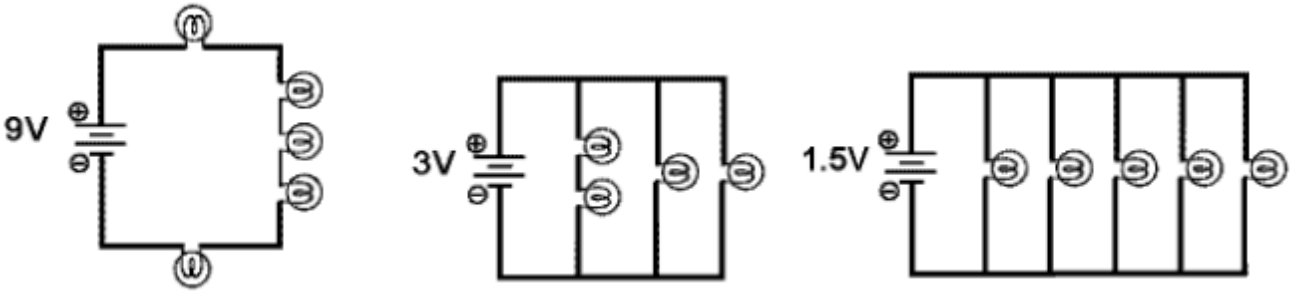
1. Look at the voltmeter below. What should it read (approximately)



2. What voltage reading would you get if you connect both probes of a voltmeter to one end of a 1.5 volt battery?

<u>Study the circuit diagrams shown below (all bulbs are identical):</u>

A. **B.** **C.**



3. Which of the circuit diagrams shows only a series circuit?

4. Which of the circuit diagrams can only be described as a parallel circuit?

5. What is electrical resistance?

6. Is a closed circuit off or on?

7. List everything that is used to create an **OPEN** circuit.

8. What does it mean when you talk about a battery's **voltage**?

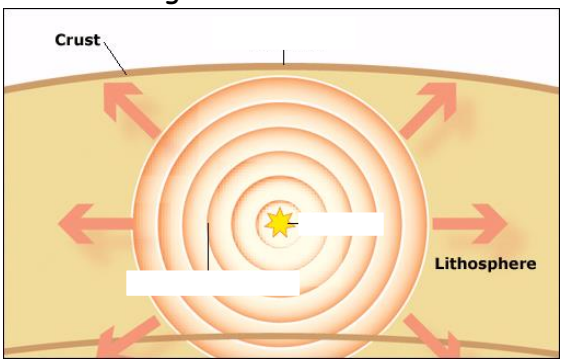
9. What are examples of **GOOD** conductors?

10. What are examples of **POOR** conductors?

11. What does an ohm measure?

Seismic Waves and Earthquakes:

12. Use the image below to answer letters A & B.



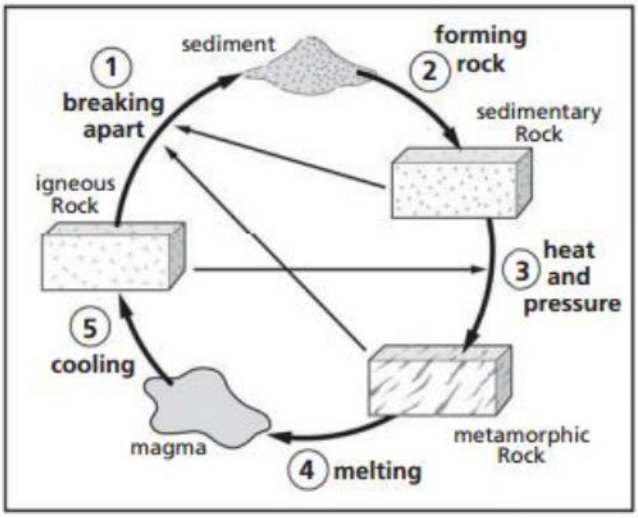
a. Label the following: epicenter, focus, seismic waves
b. In the above image, if the circles were created by the same earthquake, which type of seismic wave should be used to label the inside circle (P-wave, S-wave, surface wave).

13. What causes the up and down wiggles on a seismogram?

14. How do scientists figure out how far away from a station an earthquake occurred?

Cycling of Matter/Thermal Convection

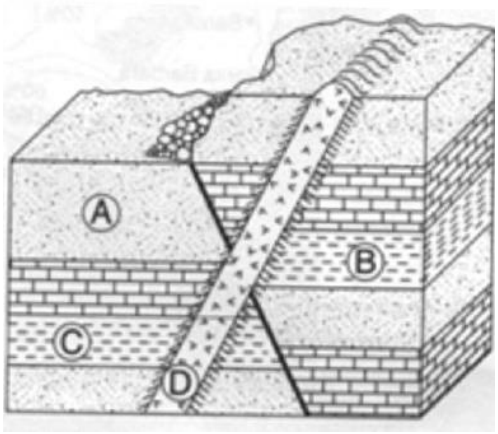
15. Use the image below to answer letters A & B.



A. In the diagram, where would you add an arrow to show that igneous rock can become magma again? Draw that arrow in the diagram.

B. Yes or No: Does the diagram above support the following statements?
   a. "Rocks may be formed from other rocks by various processes". _____
   b. "Igneous rocks are formed by eroded metamorphic and sedimentary rocks". _____
   c. "Metamorphic rocks are formed by the complete melting and cooling of any other rock". _____
   d. "Sedimentary rocks are composed of inter-grown crystals". _____

16. Look at the diagram below. Which layer is the youngest?



17. Using the diagram in #16, when did the faulting in this area occur?

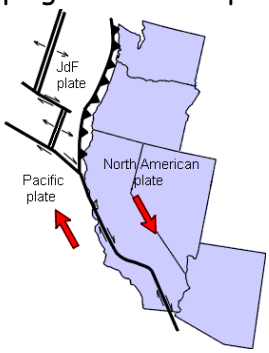
Earth Formations

18. How do we explain the force behind plate tectonics? How do the tectonic plates move?

19. You and a friend are hiking along a rocky coastline in Peru when you discover large sections of land with very different geology than the neighboring sections. Explain why in the space below.

20. What is the force that can change the size and shape of rocks called?

21. Look at the diagram below. Los Angeles, Ca was built where the edge of the Pacific plate is slipping under what plate?



22. On the map below, label the Pacific Ring of Fire.

Vocabulary: Define the words in the table below.

Vocabulary Word	Definition
Anion	
Cation	
Electrons	
Atomic Number	
Neutral	

Atomic Structure:

23. Which atomic particle(s) have the most mass? (proton, electron, neutron)

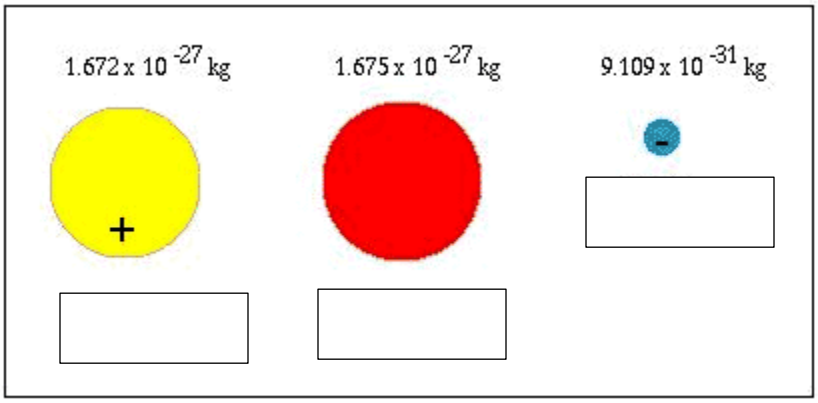
24. Use the diagram below to answer questions a & b.

p = proton
n = neutron
e = electron

a. Which way would the scale lean and why?

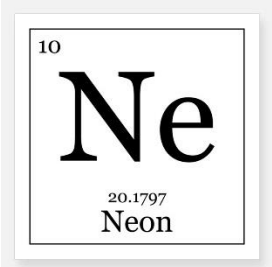
b. What would be added to make the scale balanced?

25. In the diagram below, label the proton, neutron, and electron



The Periodic Table

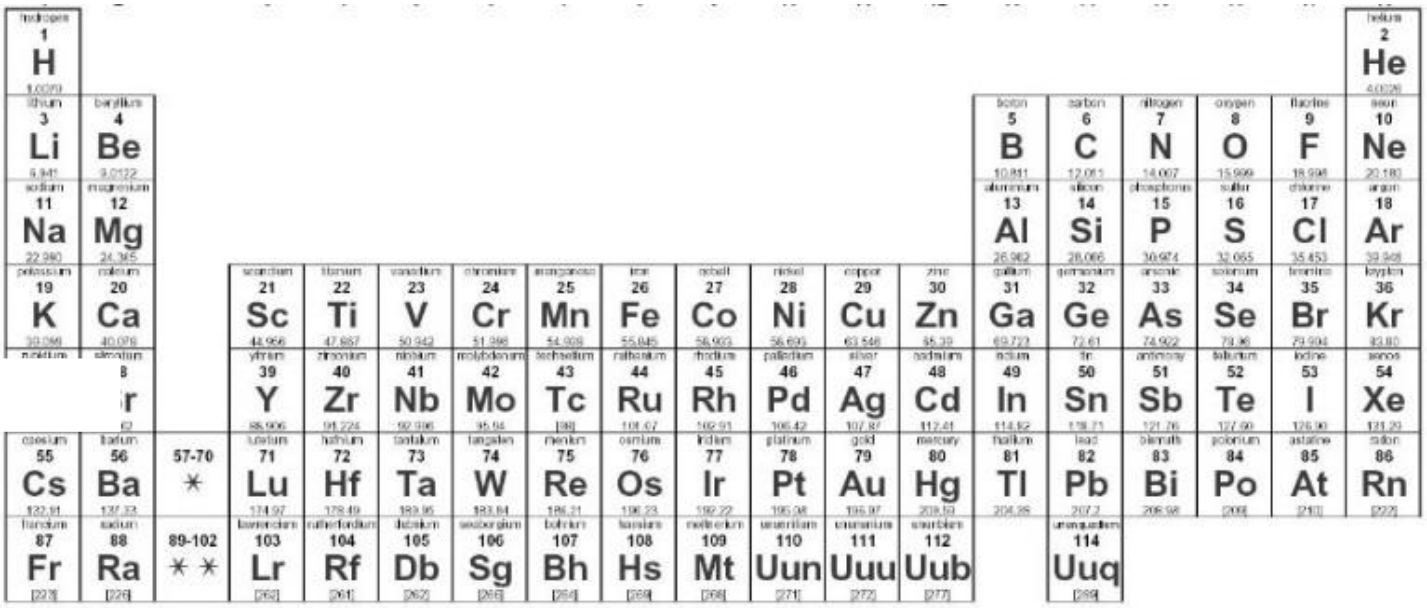
26. Label the following on the periodic table square below: Element Name, Element Symbol, Atomic Number, Atomic Mass



27. Looking at the element in #26, fill out the following chart:

Element Symbol	Atomic Mass	Atomic Number	Protons	Neutrons	Electrons

28. On the periodic table below, label the following families using your color coded periodic table: Alkali Metals, Alkaline Earth Metals, Halogens, Noble Gases, Lanthanides, Actinides, & outline the metalloids in red.



29. List an Alkali Metal and a Noble Gas that are:

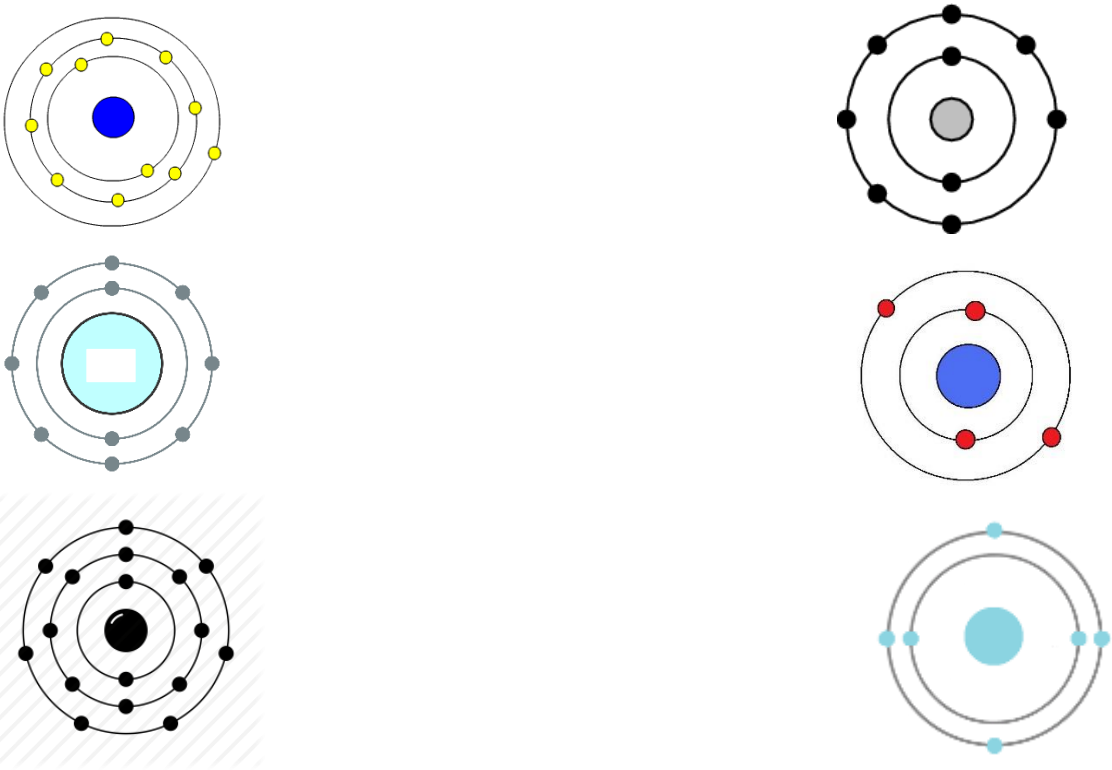
in period 2_____

in period 3_____

in period 4_____

30. List 3 elements that are in Group 1:

31. Use the Bohr Models below to complete the following:
    a. Label each Bohr Model with the Element's name
    b. Label which family each element belongs in
    c. Label how many **protons** each element has
    d. Label the charges that each element/Bohr model would have
    e. Which of the element/Bohr models below would only have 4 protons?
    f. Which elements would combine in a 1:1 ratio?



32. Calculate the molar mass of the following compounds:
    a. KOH b. $MgBr_2$ c. LiCl

33. Balance the following equations:
    a. _____ K + _____ Br_2 → _____ KBr

    b. _____ N_2 + _____ H_2 → _____ NH_3

    c. _____ Ca + _____ Cl_2 → _____ $CaCl_2$

34. Complete the following grams to mole conversions:
    a. Convert 65 grams of HF to moles

    b. Convert 40 grams of H_3PO_4 to moles

    c. Convert 12.3 grams of CO_2 to moles

35. Use the equation below to complete the following:

    _____Na + _____ Cl_2 → _____ NaCl

    a. Balance the equation
    b. What is the mole ratio of: Na to Cl _____
    c. What is the mole ratio of: Na to NaCl _____
    d. What is the mole ratio of: Cl_2 to NaCl _____
    e. If you have 6 moles of Cl_2, how many moles of NaCl would you produce?

36. Complete the following moles to gram conversions:
    a. Convert 3.5 moles of C_6H_6 to grams

    b. Convert 22.5 moles of $BaCO_3$ to grams

    c. Convert 9.3 moles of SmO to grams