

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

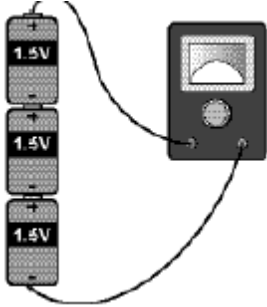
### Final Exam Study Guide

**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:

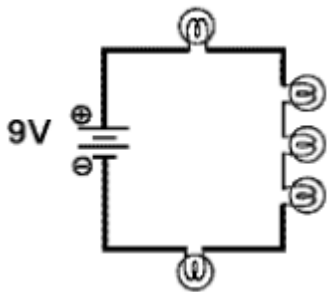
1. Look at the voltmeter below. What should it read (approximately)



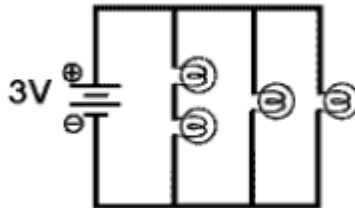
2. What voltage reading would you get if you connect both probes of a voltmeter to one end of a 1.5 volt battery?

### Study the circuit diagrams shown below (all bulbs are identical):

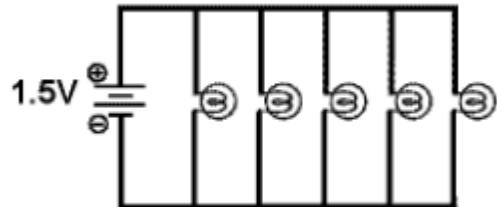
A.



B.



C.



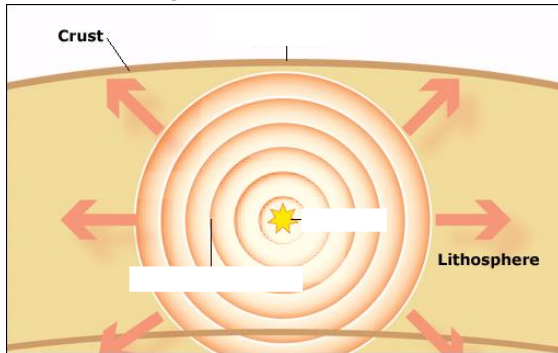
3. Which of the circuit diagrams shows only a series circuit?
4. Which of the circuit diagrams can only be described as a parallel circuit?
5. What is electrical resistance?
6. Is a closed circuit off or on?
7. List everything that is used to create an **OPEN** circuit.
8. What does it mean when you 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.



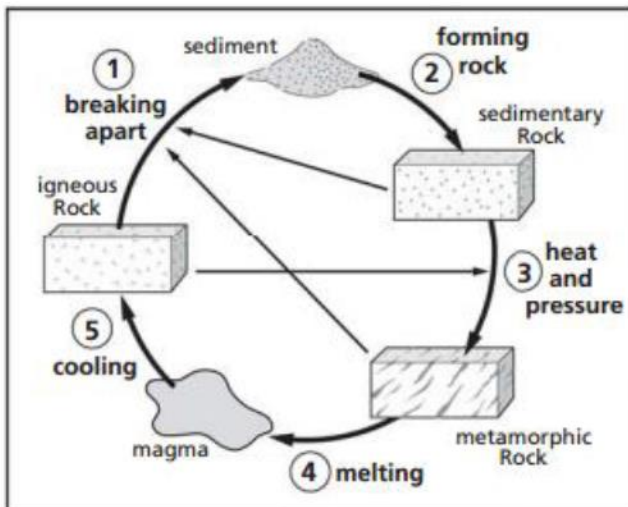
- Label the following: epicenter, focus, seismic waves
- In the above image, if the circles were created by the same earthquake, which type of seismic wave should be used to label the inside circle (P-wave, S-wave, surface wave).

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?

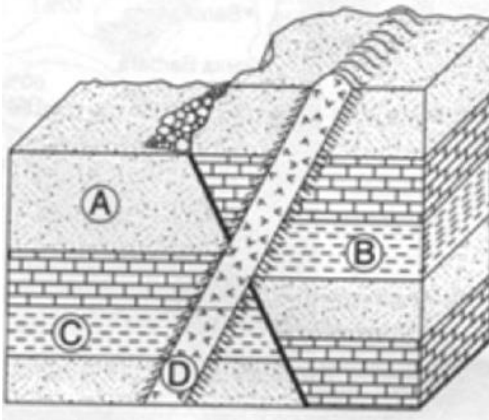
### Cycling of Matter/Thermal Convection

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? \_\_\_\_\_
- "Rocks may be formed from other rocks by various processes". \_\_\_\_\_
  - "Igneous rocks are formed by eroded metamorphic and sedimentary rocks". \_\_\_\_\_
  - "Metamorphic rocks are formed by the complete melting and cooling of any other rock". \_\_\_\_\_
  - "Sedimentary rocks are composed of inter-grown crystals". \_\_\_\_\_

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

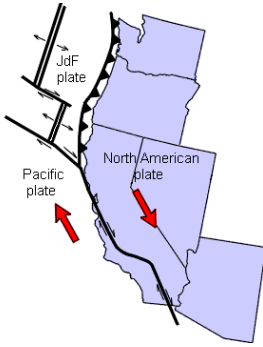


17. Using the diagram in #16, when did the faulting in this area occur?

### 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.



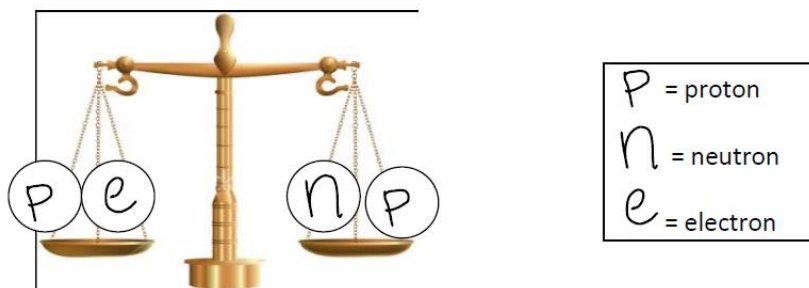
**Vocabulary:** Define the words in the table below.

Vocabulary Word	Definition
Anion	
Cation	
Electrons	
Atomic Number	
Neutral	

## Atomic Structure:

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

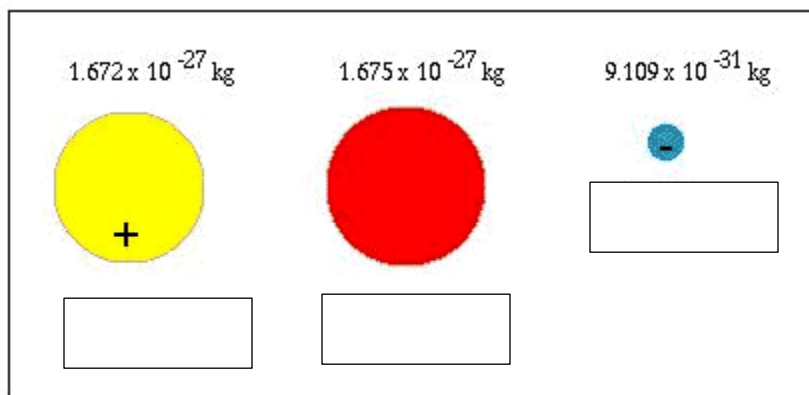
24. Use the diagram below to answer questions a & b.



a. Which way would the scale lean and why?

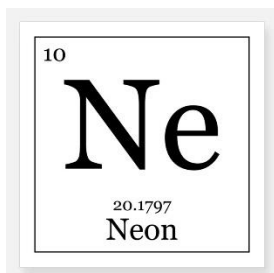
b. What would be added to make the scale balanced?

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.

hydrogen 1 H 1.008										helium 2 He 4.0026																											
lithium 3 Li 6.941		beryllium 4 Be 9.0122												boron 5 B 10.811		carbon 6 C 12.011		nitrogen 7 N 14.007		oxygen 8 O 15.999		fluorine 9 F 18.998		neon 10 Ne 20.180													
sodium 11 Na 22.990		magnesium 12 Mg 24.305												aluminum 13 Al 26.982		silicon 14 Si 28.086		phosphorus 15 P 30.974		sulfur 16 S 32.065		chlorine 17 Cl 35.453		argon 18 Ar 39.948													
potassium 19 K 39.098		calcium 20 Ca 40.078												gallium 31 Ga 69.723		germanium 32 Ge 72.61		arsenic 33 As 74.922		selenium 34 Se 78.96		bromine 35 Br 79.904		krypton 36 Kr 83.80													
rubidium 37 Rb 85.468		strontium 38 Sr 87.62												indium 49 In 114.818		tin 50 Sn 118.71		antimony 51 Sb 121.76		tellurium 52 Te 127.60		iodine 53 I 126.90		xenon 54 Xe 131.29													
cesium 55 Cs 132.91		barium 56 Ba 137.32		* 57-70		lanthanum 71 Lu 174.97		hafnium 72 Hf 178.49		tantalum 73 Ta 180.95		tungsten 74 W 183.84		rhenium 75 Re 186.21		osmium 76 Os 190.23		iridium 77 Ir 192.22		platinum 78 Pt 195.08		gold 79 Au 196.97		mercury 80 Hg 200.59		thallium 81 Tl 204.38		lead 82 Pb 207.2		bismuth 83 Bi 208.98		polonium 84 Po 209		astatine 85 At 210		radon 86 Rn 222	
francium 87 Fr [223]		radium 88 Ra [226]		** 89-102		actinium 89 Ac [227]		thorium 90 Th 232.04		protactinium 91 Pa 231.04		uranium 92 U 238.03		neptunium 93 Np [237]		plutonium 94 Pu [244]		americium 95 Am [243]		curium 96 Cm [247]		berkelium 97 Bk [247]		californium 98 Cf [251]		einsteinium 99 Es [252]		fermium 100 Fm [257]		mendelevium 101 Md [258]		nobelium 102 No [259]					

\* Lanthanide series

lanthanum 57 La 138.91	cerium 58 Ce 140.12	praseodymium 59 Pr 140.91	neodymium 60 Nd 144.24	promethium 61 Pm [145]	samarium 62 Sm 150.36	europium 63 Eu 151.96	gadolinium 64 Gd 157.25	terbium 65 Tb 158.93	dysprosium 66 Dy 162.50	holmium 67 Ho 164.93	erbium 68 Er 167.26	thulium 69 Tm 168.93	ytterbium 70 Yb 173.04
actinium 89 Ac [227]	thorium 90 Th 232.04	protactinium 91 Pa 231.04	uranium 92 U 238.03	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [258]	nobelium 102 No [259]

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

in period 2 \_\_\_\_\_

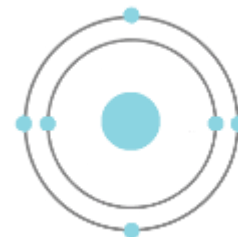
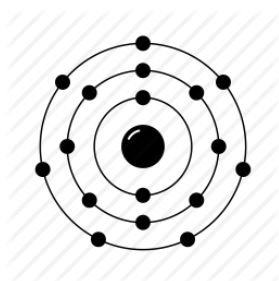
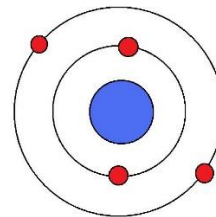
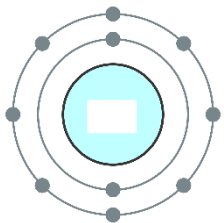
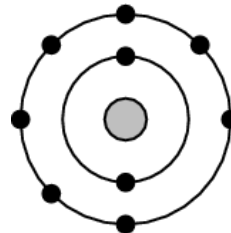
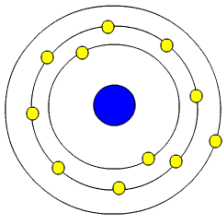
in period 3 \_\_\_\_\_

in period 4 \_\_\_\_\_

30. List 3 elements that are in Group 1:

31. Use the Bohr Models below to complete the following:

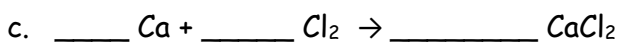
- Label each Bohr Model with the Element's name
- Label which family each element belongs in
- Label how many **protons** each element has
- Label the charges that each element/Bohr model would have
- Which of the element/Bohr models below would only have 4 protons?
- Which elements would combine in a 1:1 ratio?



32. Calculate the molar mass of the following compounds:



33. Balance the following equations:





34. Complete the following grams to mole conversions:

- a. Convert 65 grams of HF to moles
  
  
  
  
  
  
  
  
  
  
- b. Convert 40 grams of  $\text{H}_3\text{PO}_4$  to moles
  
  
  
  
  
  
  
  
  
  
- c. Convert 12.3 grams of  $\text{CO}_2$  to moles

35. Use the equation below to complete the following:



- 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:  $\text{Cl}_2$  to NaCl \_\_\_\_\_
- e. If you have 6 moles of  $\text{Cl}_2$ , how many moles of NaCl would you produce?

36. Complete the following moles to gram conversions:

- a. Convert 3.5 moles of  $\text{C}_6\text{H}_6$  to grams
  
  
  
  
  
  
  
  
  
  
- b. Convert 22.5 moles of  $\text{BaCO}_3$  to grams
  
  
  
  
  
  
  
  
  
  
- c. Convert 9.3 moles of SmO to grams