

Name: _____

Define and give an example for each of the following:

1. Physical change
2. Chemical properties
3. Pure substances
4. Mixtures
5. Elements
6. Compounds
7. Homogeneous mixtures
8. Heterogeneous mixtures
9. List 2 properties of each:
 - Metals:
 - Non-metals:
 - Metalloids:
10. List the rules for writing atomic notation for an element.
11. Write the atomic notation for a sodium atom
12. Determine the protons, neutrons and electrons for the following element potassium

13. Draw the lewis dot diagrams for the following elements He, Nitrogen

14. Draw the Lewis dot structure for the following ions: sodium, Nitrogen

15. Label the following on the PT below

alkali metals

Alkali earth metals

halogens

Noble gases

Metals

Non metals

1																	13	14	15	16	17	18																																
1 H 1.007 Hydrogen	2											5 B 10.811 Boron	6 C 12.011 Carbon	7 N 14.001 Nitrogen	8 O 15.999 Oxygen	9 F 18.998 Fluorine	10 Ne 20.180 Neon																																					
3 Li 6.941 Lithium	4 Be 9.012 Beryllium											11 Na 22.990 Sodium	12 Mg 24.305 Magnesium											19 K 39.098 Potassium	20 Ca 40.078 Calcium	21 Sc 44.956 Scandium	22 Ti 47.867 Titanium	23 V 50.942 Vanadium	24 Cr 51.996 Chromium	25 Mn 54.938 Manganese	26 Fe 55.845 Iron	27 Co 58.933 Cobalt	28 Ni 58.693 Nickel	29 Cu 63.546 Copper	30 Zn 65.38 Zinc	31 Ga 69.723 Gallium	32 Ge 72.64 Germanium	33 As 74.922 Arsenic	34 Se 78.96 Selenium	35 Br 79.904 Bromine	36 Kr 83.798 Krypton													
37 Rb 85.468 Rubidium	38 Sr 87.62 Strontium	39 Y 88.906 Yttrium	40 Zr 91.224 Zirconium	41 Nb 92.906 Niobium	42 Mo 95.94 Molybdenum	43 Tc 98 Technetium	44 Ru 101.07 Ruthenium	45 Rh 102.905 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.868 Silver	48 Cd 112.411 Cadmium	49 In 114.818 Indium	50 Sn 118.710 Tin	51 Sb 121.760 Antimony	52 Te 127.60 Tellurium	53 I 126.905 Iodine	54 Xe 131.29 Xenon											87 Fr 223 Francium	88 Ra 226 Radium											104 Rf 261 Rutherfordium	105 Db 262 Dubnium	106 Sg 266 Seaborgium	107 Bh 264 Bohrium	108 Hs 277 Hassium	109 Mt 268 Meitnerium	110 Ds 271 Darmstadtium	111 Rg 272 Roentgenium	112 Cp 277 Copernicium	113 Uut 277 Ununtrium	114 Fl 277 Flerovium	115 Uup 277 Ununpentium	116 Lv 277 Livermorium	117 Uus 277 Ununseptium	118 Uuo 277 Ununoctium
55 Cs 132.905 Cesium	56 Ba 137.327 Barium											72 Hf 178.49 Hafnium	73 Ta 180.948 Tantalum	74 W 183.84 Tungsten	75 Re 186.207 Rhenium	76 Os 190.23 Osmium	77 Ir 192.222 Iridium	78 Pt 195.084 Platinum	79 Au 196.967 Gold	80 Hg 200.59 Mercury	81 Tl 204.383 Thallium	82 Pb 207.2 Lead	83 Bi 208.980 Bismuth	84 Po 209 Polonium	85 At 210 Astatine	86 Rn 222 Radon											101 Pa 231 Protactinium	102 Th 232 Thorium	103 U 238 Uranium	104 Np 237 Neptunium	105 Pu 244 Plutonium	106 Am 243 Americium	107 Cm 247 Curium	108 Bk 247 Berkelium	109 Cf 251 Californium	110 Es 252 Einsteinium	111 Fm 257 Fermium	112 Md 258 Mendelevium	113 No 259 Nobelium	114 Lr 262 Lawrencium				

Ionic bonding:

- Which elements loses electrons?
- Which elements gain electrons?
- List the rules for writing the formula for an ionic compound.

16. Provide ONE full example of ionic bond formation, using lewis dot diagrams

17. Write the formula for the following compounds

- aluminium fluoride
- lithium oxide
- beryllium iodide

18. List the rules for naming ionic compounds with polyatomic ions.

19. Write the formula for the following compounds

- potassium and permanganate
- magnesium and chlorate
- gallium and nitrate
- cesium and carbonate

20. List the rules for naming molecular compounds.

a) Name the following

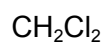
- diarsenic trisulfide
- carbon monoxide
- dihydrogen monoxide

b) Write the names for the following compounds



21. List the rules for structural diagrams.

22. Draw structure diagrams for the following



Word and Chemical Equations:

23. What is a word equation?

24. What is a chemical equation?

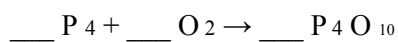
25. What is a reactant?

26. What is a product?

27. What are the rules for balancing chemical equations?

28. For the following chemical equation:

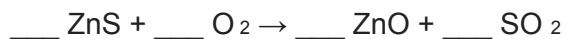
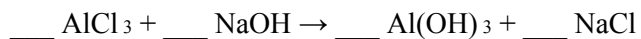
29. =



What are the reactants? _____

What are the products? _____

30. Write in coefficients to balance the chemical equation. If the coefficient is 1, write it in. Use the space below for rough work if necessary.



31. Types of reactions. **Define and provide an example of each of the following.**

- Synthesis reaction
- Single replacement/displacement reactions
- Double displacement
- Combustion reactions