Name: _____ Period: _____

Chemical Bonds and Formulas Review Sheet (50 points)

Fill in the blanks. Use your notes!

1. True/False. Most matter exists as pure elements. _____
2. What is the name of the electrons in the outermost shell in an atom? _____
3. How many valence electrons does Beryllium have? _____
4. How many electrons does sulfur want to complete its outer shell? _____
5. How many electrons do most elements want in their outer shell? _____
6. What is the name of the "rule" that describes the previous question? _____
7. What is the name of the bond where electrons are shared? _____
8. What is the name of the bond where e^- are transferred resulting in ion formation? _____
9. Which type of bond results in a molecule being formed? _____
10. Which element is more reactive, potassium or phosphorous? _____
11. How many electrons are shared from each atom in a single bond? _____
12. How many hydrogens are in the following molecule? $6C_4H_{12}$ _____
13. What is the oxidation number of pure bromine? _____
14. What is the oxidation number of bromine is a molecule like HBr? _____
15. What is the name of the compound with only two elements in it? _____
16. Write the name of the following molecule: _____
17. Write the chemical formula for this molecule: _____
18. Draw the Lewis dot structure for: _____
19. How many electrons are shared from each atom in a double bond? _____

Write whether the following reactions are addition (synthesis), decomposition, single displacement, double displacement, or combustions reactions.

	Reaction	Type of Reaction
20.	$C_{10}H_8 + 12\ O_2 \rightarrow 10\ CO_2 + 4\ H_2O$	
21.	$8\ Fe + S_8 \rightarrow 8\ FeS$	
22.	$Mg + 2\ H_2O \rightarrow Mg(OH)_2 + H_2$	
23.	$2\ H_2O \rightarrow 2\ H_2 + O_2$	
24.	$Pb(NO_3)_2 + 2\ KI \rightarrow PbI_2 + 2\ KNO_3$	
25.	$Na_2CO_3 \rightarrow Na_2O + CO_2$	
26.	$2\ RbNO_3 + BeF_2 \rightarrow Be(NO_3)_2 + 2\ RbF$	
27.	$C_6H_{12} + 9\ O_2 \rightarrow 6\ CO_2 + 6\ H_2O$	

Draw the Lewis Dot Structure of the following:

Compound	Lewis Dot	Compound	Lewis Dot
28. H		29. Ne	
30. Cl		31. PBr_3	
32. N_2H_2		33. C_2H_4	
34. CCl_4		35. NH_3	
36. H_2O		37. N_2	

Balance the following equations:

38. ____ Fe + ____ H_2S0_4 → ____ $Fe_2(SO_4)_3$ + ____ H_2

39. ____ KOH + ____ H_3PO_4 → ____ K_3PO_4 + ____ H_2O

40. ____ NH_3 + ____ O_2 → ____ NO + ____ H_2O

41. ____ B_2Br_6 + ____ HNO_3 → ____ $B(NO_3)_3$ + ____ HBr

42. ____ $(NH_4)_3PO_4$ + ____ $Pb(NO_3)_4$ → ____ $Pb_3(PO_4)_4$ + ____ NH_4NO_3

Write the word equations below as chemical equations and balance:

43. Aluminum bromide and chlorine gas react to form aluminum chloride and bromine gas. _____

44. Potassium metal and chlorine gas combine to form potassium chloride. _____

45. Aluminum and hydrochloric acid (HCl) react to form aluminum chloride and hydrogen gas. _____

Balance the reactions 1 to 6 and indicate which type of chemical reaction is being represented:

46. ____ NaBr + ____ $Ca(OH)_2$ → ___ $CaBr_2$ + ____ NaOH Reaction Type : _____

47. ____ NH_3+ ____ H_2SO_4 → ____ $(NH_4)_2SO_4$ Reaction Type : _____

48. ____ C_5H_9O + ____ O_2 → ____ CO_2 + ____ H_2O Reaction Type : _____

49. ____ Pb + ____ H_3PO_4 → ____ H_2 + ____ $Pb_3(PO_4)_2$ Reaction Type : _____

50. ____ Li_3N + ____ NH_4NO_3 → ___ $LiNO_3$ + ___ $(NH_4)_3N$ Reaction Type : _____