**Name: Period: Seat#:**

**S – 22B**

**Directions**: Any questions that were not completed in class as part of the Board Game Review need to be finished as homework. Here are all the questions that were part of the review game if you missed any during the game, didn’t finish the game in class, or you were absent. Remember to show work for ANY math problems, include ALL units, and non-math questions should have good/detailed answers but do not need to be in sentence form unless asked for specifically.

1. What is the name of the compound SrO?
2. What is the molar mass for the hydrocarbon C24H37O6
3. What happens to the electrons during a metallic bond?
4. What type of bond forms between two nonmetals share electrons?
5. Balance the following reaction and identify the mole ratio between the two reactants. CH4 + O2 →
6. What are the dominant intermolecular forces present in water?
7. Rank the bulk forces in order of strength from weakest to strongest.
8. What is the formula for copper (IV) sulfate?
9. What kind of a reaction is this? Na + CaSO4 →
10. Which molecule has covalent bonding and does not require a double or triple bond? CO2, CO, N2, CI2
11. Draw the Lewis dot structure for BrO3-
12. What is the VSEPR geometry for carbon tetrachloride?
13. What is the molar mass of (NH4)2S?
14. What is the VSEPR geometry for ammonia?
15. Draw the Lewis Dot structure for nitrogen gas.
16. What kind of a reaction requires O2 as a reactant?
17. Predict the products and balance the following reaction: aluminum phosphate plus rubidium nitrite
18. In a 'polar' bond, the elements involved are sharing the electron(s)...
19. If you have 10 mol of Zn, how many mols of ZnO can be produced? 3Zn+Al2O3→3ZnO+2Al
20. If you have 25g of Zn, how many g of ZnO can be produced? 3Zn+Al2O3→3ZnO+2Al
21. Name the seven diatomic elements.
22. What is the molar mass of Al(OH)3?
23. If you have 38L of O2 at STP, how many L of H2O can you make, assuming your water is gaseous? 2H2 + O2→ 2H2O
24. Draw the Lewis dot structure for AlH3
25. What is the mole ratio of TNT to carbon monoxide?  
     C7H5N3O6 → CO + C + H2O + N2
26. What is the formula of sodium carbonate?
27. What is the molar mass of sodium carbonate?
28. What is the molar mass of iron (III) sulfate
29. How many moles of iron (III) sulfate in 44.5g iron (III) sulfate? The molar mass is 400.1 g/mol.
30. How many grams potassium chloride are in 14.6 moles potassium chloride? 1 mole = 74.5 g
31. How many grams of iron (III) carbonate are found in 5.46 moles iron (III) carbonate?
32. Aqueous copper(II) bromide reacts with aqueous aluminum chloride. What type of reaction is this?
33. Aqueous copper(II) bromide reacts with aqueous aluminum chloride. Balance this equation and predict the products.
34. How many moles of sodium carbonate are in 10.9 g sodium carbonate? Molar mass is 106 g
35. What is the mole ratio of iron(III) sulfate to sodium sulfate?  
    Fe2(SO4)3 + 3Na2CO3 →Fe2(CO3)3 + 3Na2SO4
36. If 10 moles iron (III) sulfate reacts, how many moles sodium sulfate will form?  
    Fe2(SO4)3 + 3Na2CO3 →Fe2(CO3)3 + 3Na2SO4
37. If 15 g oxygen is reacted with hydrogen, then how many moles water will be produced?
38. What are three of the four indications that a chemical reaction has occurred?
39. If 46 g sodium metal reacts completely, how many moles chlorine gas will be required to make sodium chloride?
40. If 100 g sodium chloride reacts completely with barium, then how many grams sodium metal will be obtained?   
    2NaCl + Ba → BaCl2 + 2Na
41. How many liters fluorine gas in 0.87 moles of fluorine gas at STP?
42. How many grams of oxygen gas are in 0.69L of oxygen gas at STP?
43. 2H2S +3O2 → 2SO2+ 2H2O How many moles of H2S are required to form 8.20 moles of SO2?
44. 2NaClO3→2NaCl+3O2 How many molecules of oxygen are produced when 80.0 grams of sodium chloride are produced?
45. Na2S2O3(aq) + 4Cl2(g) + 5H2O(aq) →2NaHSO4(aq)+8HCl(aq)  
    How many moles of H2O react if 5.24 x 1019molecules of HCl are formed?
46. Draw the Lewis structure and identify the VSEPR geometry for BCl3.
47. Which electrons are involved in bonding?
48. How many electrons does Antimony need to gain or lose to have a full valence shell?
49. How many valence electrons are available in NF3?
50. Identify if the following are ionic or covalent:   
    LiF, CH4, CH3OH, NH3, MgO
51. List the first ten prefixes used to name covalent molecules
52. Name C2H6
53. Name Ag2O
54. Name Cu(NO2)3
55. Name SO6
56. Draw the Lewis structure for BaS
57. Draw the Lewis Structure for CH3OH
58. How many lone pairs does CH4 have?
59. How many lone pairs does NH3 have?
60. Is SF2 polar or non-polar?
61. Is SiO2 polar or non-polar?
62. Which is more polar, CHCl3 or CHBr3
63. Identify the main IMF present in F2
64. Identify the main IMF present in HCl
65. Identify the main IMF present in C (graphite)
66. What is the sum of the coefficients when balanced:  
    \_\_\_Ag + \_\_\_S 🡪 Ag2S