You will need a #2 PENCIL and a CALCULATOR for the test. A periodic table will be provided for you. You will not be given a list of polyatomic ions. You are expected to know them!

TOPICS TO REVIEW FOR THE FINAL:

1. Be able to balance and write equations. $H_2 + O_2$ ---$\rightarrow$ H_2O
2. Balancing a chemical equation satisfies what law?
3. What is the difference between a reactant, product, and catalyst
4. What does the (s), (l), (g), and (aq) tell you about the substance?
5. Be able to identify a combination/ single replacement/ double replacement/ combustion reactions
6. When an organic compound combusts, what forms?
7. When hydrochloric acid and sodium hydroxide react, what is the balanced equation?
8. Naming acids: What kind of acid ends with –ic, -ous ?
9. Lewis Dot structures
10. Valence shell electrons
11. IONIC vs polar covalent vs nonpolar covalent bonds
12. Be able to identify compounds by name: Ex: Zinc sulfate or Lead (II) phosphate
13. Grams to moles ie: How many grams are in 4.44 moles of water?
14. Moles to liters ie: How many moles are in 3.56 liters of salt?
15. Liters to liters at STP ie: How many liters water are in 88.9 liters of salt?
16. Percent composition ie: What is the percent comp of carbon in sugar?
17. Stoichiometry: 1st thing in stoichiometric problems is to go to MOLES
18. limiting reagent problems
19. Gram to gram stoichiometry problems

20. Given the following balanced equation: $H_2 + Cl_2$ ---> $2\ HCl$
How many *liters* of H_2 will be used when 4.13 liters of Cl_2 react to produce acid at STP?

21. Given the following balanced equation: $8\ Fe + S_8$ ---> $8\ FeS$
What is the *limiting reagent* when 8.26 grams of iron reacts with 8.88 grams of sulfur?

22. To convert from one component of a balanced equation to another component of a balanced equation, you must go through a _____ to _____ ratio.
23. Trapped gas laws
Know these laws: Boyles, Charles', Gay-Lussac's, Combined Gas Law and how to solve problems
24. Ideal Gas Law PV=nRT (R value will be given)
24b. you need to know that 1atm= 760 mmHg = 760 torr= _____kPa?
25. Graham's Law
26. What temperature is absolute zero defined?
27. exothermic characteristics
28. endothermic characteristics
29. heat shown in reactant side is a _____ rxn.
30. Vaporization/condensation/boiling/freezing (endo/exo)?
31. Delta H is positive for endo or exothermic rxns

32. What is the definition of pH?
33. An acid solution is one that has a pH of_____ and a pOH of_____
34. What is the product of hydronium and hydroxide ions?
35. List the six strongest acids:
36. Oxidation numbers
37. REDOX equations
38. Reducing and oxidizing agents
39. According to the Kinetic Molecular Theory, particles are _____--
40. Molarity= mol/L
41. Carbon likes to form bonds with other Carbon atoms
42. Carbon has a high tendency to form covalent bonds
43. Alkanes are organic compounds without double bonds (ex: methane, ethane, propane, butane)
44. What do all organic compounds contain? _____
45. Most electronegative element?
46. The charge of Fluorine gas?
47. The oxidation number for fluoride?
48. The hydroxide ion OH- is called hydroxyl in organic compounds.
49. Electron configuration of Oxygen? How many electrons does oxygen need to add to satisfy the Octet Rule?
50. _____
51. _____
52. _____
53. _____