**Bonus Quiz – Honors Chemistry**

**Form A**

**Please write this form number on the top of your answer sheet in the appropriate space**. Otherwise, your quiz will be graded according to an answer key I choose at random.

**Additionally, when you write your name on the answer sheet, please include your last name**. People in some of my classes have the same first name, and if I can’t tell you apart, I can’t know whose paper it is.

**Please do not write on this paper.** I will be reusing this paper for my other honors chemistry lab, and I don’t really want to make two photocopies of each paper. Because trees and stuff.

1. Which of the following is the best definition for hypothesis?
2. A guess about a lab
3. A guess in which you explain a possible cause/effect relationship between independent and dependent variables.
4. It is synonymous with independent variable, though it’s usually phrased differently.
5. These are all poor definitions of the term “hypothesis.”
6. What is the difference between an independent and dependent variable?
7. An independent variable is the intended outcome of a lab experiment.
8. An independent variable is the variable which is being manipulated by the experimenter.
9. A dependent variable is a variable that can be responsible for sources of experimental error.
10. More than one of these.
11. Which term is used to measurements which are consistent when performed repeatedly?
12. Precision
13. Accuracy
14. Significant Figures
15. Neither of these
16. Data which involves nonnumerical measurements is referred to as data.
17. Independent data
18. Dependent data
19. Quantitative data
20. None of these
21. The general procedure that scientists use when studying some phenomenon is usually referred to as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
22. Scientific gateway
23. Hypothesis
24. Scientific method
25. Science process
26. What is the purpose of a beaker in the lab?
27. It is used to measure the volume of a liquid
28. It is used to measure the volume of a solid
29. It is used as a container for performing reactions
30. More than one of these is correct.
31. When making an acidic solution, is it safer to add the acid to the water or to add the water to the acid?
32. Acid to water
33. Water to acid
34. What is the SI base unit for temperature?
35. Degrees Celsius
36. Kelvin
37. Degrees Fahrenheit
38. None of these answers is correct
39. What does the prefix with the symbol “μ” represent?
40. One hundred
41. One hundredth
42. One thousandth
43. One millionth
44. The density of a 45 gram object that has a volume of 11 mL is:
45. 4.1 g/mL
46. 0.41 g/mL
47. 0.24 g/mL
48. 0.024 g/mL
49. In order to convert from Kelvin to degrees Celsius, you need to:
50. Add 273
51. Subtract 273
52. Neither of these
53. 4500 cm is equal to how many meters?
54. 450 meters
55. 4.5 meters
56. 0.045 meters
57. None of these
58. An object has a mass of 0.763 grams and a volume of 0.010 mL. When I calculate the density of this object, how many significant figures should I use when writing the answer?
59. 2
60. 3
61. 1
62. None of these answers is correct
63. On a graph, what variable is represented by the y-axis?
64. Time
65. Distance
66. Independent variable
67. Dependent variable
68. Which of the following is always true of a good graph?
69. The dots are connected
70. It’s a line graph
71. The best fit line goes through the origin
72. All of these are true of a good graph
73. A compound is:
74. When a substance contains only one type of atom
75. When a substance contains only one type of molecule
76. Another word for “solution”
77. Another word for “heterogeneous mixture”
78. Which of the following is a chemical change?
79. Sugar dissolving in rubbing alcohol
80. Heating a bowling ball in the oven
81. Boiling a pot of water
82. None of these is an example of a chemical change

18-21: Each of the following provides evidence that a change was either chemical or physical. On your answer sheet, write “A” if the situation provides evidence for a chemical change and write “B” if it does not.

1. A liquid turns cloudy when two clear solutions are mixed.
2. The temperature of a mixture increases, but only when heat is added to it.
3. Both chemical and physical properties of the material change.
4. Formation of bubbles
5. Which of these is the best definition of a chemical property?
6. A property that changes during a physical change.
7. A property that determines the ability of something to become a chemical.
8. A property that determines the ability of something to undergo a chemical reaction.
9. A property that does not describe the appearance of a chemical.

23-27: Indicate whether each of these is a chemical property or a physical property. Write “A” on your answer sheet to indicate that it is a chemical property and “B” on your answer sheet to indicate that it is a negative property.

1. Solubility in water
2. Density
3. Boiling point (the temperature at which something boils)
4. Color
5. Flammability
6. What type of property is always an intensive property?
7. Transitive property
8. Chemical property
9. Physical property
10. None of these answers are correcct
11. Greek philosophers believed that atoms were:
12. Very small
13. Able to change into other matter by rearranging their combinations
14. Indestructible
15. All of these
16. Which of these was not something that Dalton said in his model of the atom?
17. Atomic rearrangements were the source of melting and boiling
18. Atoms are indestructible and small
19. Atoms of the same element have the same properties
20. Molecular formulas only contain whole numbers of atoms.
21. Which of these experiments deduced the presence of the nucleus of an atom?
22. Dalton’s multiplicity experiments
23. Thomson’s Cathode Ray Experiment
24. Rutherford’s Gold Foil Experiment
25. Bohr’s Planetary Experiment
26. What was Thomson’s model of the atom referred to as?
27. It didn’t have a name, but it described the atom as small and indestructible
28. The plum pudding model
29. The nuclear model
30. The planetary model
31. What is an alpha particle?
32. A small particle with positive charge
33. A small particle with negative charge
34. A radioactive particle with either positive or negative charge
35. None of these describe an alpha particle
36. How many protons are present in tin-119?
37. 50
38. 69
39. 119
40. It depends on the isotope
41. How many neutrons are present in dysprosium-165?
42. 66
43. 97
44. 99
45. None of these answers are correct
46. Time of flight mass spectrometry separates the isotopes of an element using the principle that:
47. Lighter isotopes can change direction in a magnetic field more quickly than heavier ones.
48. Heavier isotopes accelerate faster in a magnetic field than lighter isotopes do.
49. The time it takes for heavier isotopes to travel from the sample to the detector is longer than the time it takes for lighter isotopes to make the same trip.
50. Heavier isotopes turn in a magnetic field more quickly than lighter ones.

***YOU ARE FINISHED WITH THIS QUIZ. MAKE SURE YOU INDICATE THAT YOU HAVE THE “A” VERSION OF THE QUIZ ON YOUR ANSWER SHEET.***