Name: _____ Period: ____

Test Review: Properties of Matter (Unit 2)

(Mr. Trulsson) (2009) (For test on 10-15-09)

1. _____ A characteristic observed when a substance changes into another substance is a _____ _____. Examples would include the ability of wood to burn, and whether sodium will react with water.

2. _____ A characteristic of a substance that can be observed without changing the substance into something else is a _____ _____. Examples would be the mass or density of an object, or the size of an object.

3. _____ A _____ _____ makes a new substance. Examples would be burning wood and rusting iron.

4. _____ A _____ _____ alters the form or appearance of a substance without changing it into a different substance. Examples would be boiling water or chopping wood.

5. _____ A substance made of two or more elements that are chemically bound together in a set ratio.

6. _____ A substance that cannot be broken down into any simpler substance, and that is made of only one kind of atom.

7. _____ The smallest piece of an element that has the properties of that element is a(n) _____.

8. _____ A particle made of two or more atoms is a(n) _____.

9. _____ A positively charged particle that is present in the nucleus of all atoms is a(n) _____.

10. _____ A negatively charged particle that is part of every kind of matter is a(n) _____.

11. _____ An uncharged particle in the nucleus of the atom is a(n) _____.

12. _____ The center of an atom is its _____.

13. _____ In the modern model of the atom, the outer shell of the atom containing electrons is called the _____ _____.

14. _____ The _____ model of the atom shows the energy levels (also called shells or orbitals) of electrons as a series of concentric circles with the nucleus in the center.

15. _____ The number of electrons that can occupy the first shell of an atom.

16. _____ The number of electrons that can occupy the second shell of an atom.

17. _____ The number of electrons that can occupy the outermost shell of an atom.

18. _____ The _____ electrons are the electrons in the outer shell of an atom.

19. _____ The number of protons in an atom is its _____ _____.

20. _____ The average sum of the number of protons and neutrons in the nucleus of an atom is its _____ _____, also called the mass number.

21. (a)_____ To find the number of neutrons in the nucleus of an atom, subtract the (a)_____ _____ from the (b)_____ _____.
(b)_____

22. _____ The horizontal (side-to-side) rows on the periodic table are called _____.

23. _____ The vertical (up-and-down) columns on the periodic table are called _____ or _____.

24. _____ The horizontal rows in the periodic table indicate the number of _____ _____.

25. _____ The vertical columns in the periodic table indicate the number of _____ _____.

26. _____ A _____ conducts heat and electricity well, is ductile and malleable, and has luster (is shiny).

27. _____ A _____ does not conduct heat and electricity well, is brittle, and is dull (not shiny).

28. _____Name of the elements in group 17 which react strongly with most metals, and contain seven valence electrons.

29. _____ Name of the elements in group 18 which do not react with any other substances, because their outer electron shell is full.

30. _____ Name of the elements in group 1 which react violently with water, and contain one valence electron.

31. _____ Name of the elements in group 2 which react slowly with water, and contain two valence electrons

32. _____ Bond between atoms in which two atoms share one, two or three pairs of electrons to give each the equivalent of a full outer shell.

33. _____ Bond between atoms in which one atom takes one or two electrons from another atom, causing the two oppositely charged atoms to be pulled together.

34. _____ Substance that releases OH^- ions when dissolved in water, tastes bitter, and has a pH of between 7.1 and 14. Examples are ammonia and soap.

35. _____ Substance that releases H^+ ions when dissolved in water, tastes sour, and has pH between 0 and 6.9. Examples are vinegar and lemon juice.

36. _____ A mixture in which all of the substances are evenly mixed, such that every sample from the mixture would be the same. Examples are salt dissolved in water (in Earth's oceans), or oxygen dissolved in nitrogen (in Earth's atmosphere).

37. _____ In the mixture named in question 37, the substance found in the greatest quantity, such as water in the Earth's oceans.

38. _____ In the mixture named in question 37, the substance or substances found in lesser quantities, such as salt in the Earth's oceans.

39. _____ How many neutrons does an atom of iron-56 have?

40. _____ How many neutrons does an atom of magnesium-24 have?

41. _____ How many neutrons does the most common isotope of uranium have?

42. _____ How many protons does an atom of fluorine have?

43. _____ How many protons does an atom of silicon have?

44. _____ How many electrons does a neutral atom of sodium have?

45. _____ How many electrons does a neutral atom of lithium have?

46. _____ How many valance electrons does an atom of argon have?

47. _____ How many valance electrons does an atom of potassium have?

48. _____ How many electron shells does an atom of phosphorus have?

49. _____ How many electron shells does an atom of zinc have?

50. _____ What is the metal classification of the element gallium?

51. _____ What is the metal classification of the element germanium?

52. _____ What is the average atomic mass of the element carbon?

53 _____ What is the atomic number of the element oxygen?

54. _____ For the formula: $\mathbf{3C_6H_{12}O_6}$, how many atoms of carbon are there?

55. _____ For the formula: $\mathbf{3C_6H_{12}O_6}$, how many atoms of hydrogen are there?

56. _____ For the formula: $\mathbf{Ca(H_2PO_4)_2}$, how many atoms of hydrogen are there?

57. _____ For the formula: $\mathbf{Ca(H_2PO_4)_2}$, how many atoms of oxygen are there?

58. _____ For the formula: $\mathbf{2C_7H_5(NO_2)_3}$, how many atoms of nitrogen are there?

59. _____ For the formula: $\mathbf{2C_7H_5(NO_2)_3}$, how many atoms of carbon are there?

60. _____ For the formula: $\mathbf{C_5H_7O_2(OH)_3}$, how many atoms of oxygen are there?

61. _____ For the formula: $\mathbf{C_5H_7O_2(OH)_3}$, how many atoms of hydrogen are there?

62. _____ For the formula: $\mathbf{2Al_2(SO_4)_3}$, how many atoms of aluminum are there?

63. _____ For the formula: $\mathbf{2Al_2(SO_4)_3}$, how many atoms of sulfur are there?

64. Draw a Bohr model of an atom for the element chlorine.