

Name: _____ Period: _____

Test Review: Properties of Matter (Unit 2)

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

1. Chemical Property _____ 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. Physical Property _____ 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. Chemical Change _____ A _____ makes a new substance. Examples would be burning wood and rusting iron.
4. Physical Change _____ 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. Compound _____ A substance made of two or more elements that are chemically bound together in a set ratio.
6. Element _____ A substance that cannot be broken down into any simpler substance, and that is made of only one kind of atom.
7. Atom _____ The smallest piece of an element that has the properties of that element is a(n) _____.
8. Molecule _____ A particle made of two or more atoms is a(n) _____.
9. Proton _____ A positively charged particle that is present in the nucleus of all atoms is a(n) _____.
10. Electron _____ A negatively charged particle that is part of every kind of matter is a(n) _____.
11. Neutron _____ An uncharged particle in the nucleus of the atom is a(n) _____.
12. Nucleus _____ The center of an atom is its _____.
13. Electron Cloud _____ In the modern model of the atom, the outer shell of the atom containing electrons is called the _____.
14. Bohr _____ 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. Two (2) _____ The number of electrons that can occupy the first shell of an atom.
16. Eight (8) _____ The number of electrons that can occupy the second shell of an atom.

17. Eight (8) The number of electrons that can occupy the outermost shell of an atom.
18. Valence The _____ electrons are the electrons in the outer shell of an atom.
19. Atomic Number The number of protons in an atom is its _____.
20. Atomic Mass 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) Atomic Number To find the number of neutrons in the nucleus of an atom, subtract the
(b) Atomic Mass (a) _____ from the (b) _____.
22. Periods The horizontal (side-to-side) rows on the periodic table are called _____.
23. Groups or Families The vertical (up-and-down) columns on the periodic table are called _____ or _____.
24. Electron Shells The horizontal rows in the periodic table indicate the number of _____.
25. Valence Electrons The vertical columns in the periodic table indicate the number of _____.
26. Metal A _____ conducts heat and electricity well, is ductile and malleable, and has luster (is shiny).
27. Non-Metal A _____ does not conduct heat and electricity well, is brittle, and is dull (not shiny).
28. Halogens Name of the elements in group 17 which react strongly with most metals, and contain seven valence electrons.
29. Noble Gases Name of the elements in group 18 which do not react with any other substances, because their outer electron shell is full.
30. Alkali Metals Name of the elements in group 1 which react violently with water, and contain one valence electron.
31. Alkaline Earth Metals Name of the elements in group 2 which react slowly with water, and contain two valence electrons
32. Covalent 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. Ionic 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. Base or Alkali 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. Acid 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. Solution 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. Solvent In the mixture named in question 36, the substance found in the greatest quantity, such as water in the Earth's oceans.
38. Solute In the mixture named in question 36, the substance or substances found in lesser quantities, such as salt in the Earth's oceans.
39. 30 (A.M. – A.N.) How many neutrons does an atom of iron-56 have?
40. 12 (A.M. – A.N.) How many neutrons does an atom of magnesium-24 have?
41. 146 (A.M. – A.N.) How many neutrons does the most common isotope of uranium have?
42. 9 (its atomic number) How many protons does an atom of fluorine have?
43. 14 (its atomic number) How many protons does an atom of silicon have?
44. 11 (its atomic number) How many electrons does a neutral atom of sodium have?
45. 3 (its atomic number) How many electrons does a neutral atom of lithium have?
46. 8 (from group number) How many valence electrons does an atom of argon have?
47. 1 (from group number) How many valence electrons does an atom of potassium have?
48. 3 (from period number) How many electron shells does an atom of phosphorus have?
49. 4 (from period number) How many electron shells does an atom of zinc have?
50. Metal (element 31) What is the metal classification of the element gallium?
51. Metalloid (element 32) What is the metal classification of the element germanium?
52. 12.011 What is the average atomic mass of the element carbon?
53. 8 What is the atomic number of the element oxygen?
54. 18 For the formula: $3\text{C}_6\text{H}_{12}\text{O}_6$, how many atoms of carbon are there?
55. 36 For the formula: $3\text{C}_6\text{H}_{12}\text{O}_6$, how many atoms of hydrogen are there?
56. 4 For the formula: $\text{Ca}(\text{H}_2\text{PO}_4)_2$, how many atoms of hydrogen are there?
57. 8 For the formula: $\text{Ca}(\text{H}_2\text{PO}_4)_2$, how many atoms of oxygen are there?

58. 6 For the formula: $2\text{C}_7\text{H}_5(\text{NO}_2)_3$, how many atoms of nitrogen are there?
59. 14 For the formula: $2\text{C}_7\text{H}_5(\text{NO}_2)_3$, how many atoms of carbon are there?
60. 5 For the formula: $\text{C}_5\text{H}_7\text{O}_2(\text{OH})_3$, how many atoms of oxygen are there?
61. 10 For the formula: $\text{C}_5\text{H}_7\text{O}_2(\text{OH})_3$, how many atoms of hydrogen are there?
62. 4 For the formula: $2\text{Al}_2(\text{SO}_4)_3$, how many atoms of aluminum are there?
63. 6 For the formula: $2\text{Al}_2(\text{SO}_4)_3$, how many atoms of sulfur are there?
64. Draw a Bohr model of an atom for the element chlorine.

