

Atomic Structure, Matter, and Nuclear Chemistry Review

Name: _____ Period: _____ Date: _____

Define the following terms:

1. Nucleus

2. Proton

3. Neutron

4. Electron

5. Atomic number

6. Mass number

7. Isotopes

8. Diatomic

12. Fill-in the missing information in the chart below:

Symbol	Atomic #	# Protons	# Electrons	# Neutrons	Mass #
${}^1_1\text{H}$					
${}^2_1\text{H}^{+1}$					
${}^3_1\text{H}$					
${}^{86}_{38}\text{Sr}^{+2}$					
${}^{16}_8\text{O}^{-2}$					

CLASSIFY each of the following as an (E) for element, (C) for compound, (HO) homogeneous mixture, or a (HE) for heterogeneous mixture. **It can only be one**

_____ NaCl

_____ water

_____ salad

_____ silver

_____ steel

_____ brass

_____ table salt

_____ sand in water

1. _____ Which of the following is a heterogeneous mixture?
a) oil and water b) steel c) aluminum d) air
2. _____ Water can be broken down into hydrogen and oxygen: thus H_2O is a(n)
a) element b) compound c) homogeneous mixture d) solution
3. _____ Which one of the following is a chemical property?
a) It boils at $36^\circ C$ b) It burns in air c) it is less dense than water

d) It has a strong odor
4. _____ Which is a chemical change?
a) frying an egg b) grinding coffee c) ice freezing d) laundry drying
5. _____ Which of the following is **NOT** a physical property.
a) The boiling point of a certain alcohol is $78^\circ C$ c) Anthracite coal is black and shiny.
b) Gold has no stable oxide. d) A metal wire conducts electricity.
6. _____ Which of these is a chemical property?
a) Water boils at $100^\circ C$ c) Argon is very non reactive
b) Lithium is a soft, shiny metal d) Metals have relatively low specific heats
7. _____ Which of the following is an element?
a) sugar b) salt c) air d) oxygen
8. _____ Which of the following is a heterogeneous mixture?
a) coffee b) brass c) salt water d) Italian dressing
9. _____ Which of the following is a compound?
a) KCl b) K c) saltwater d) trailmix
10. _____ Pure water can be broken down into hydrogen gas and oxygen gas by hydrolysis: thus water is a(n)

a) element b) compound c) heterogeneous mixture d) solution
11. _____ Which is a heterogeneous mixture?
a) pizza b) soda c) salt water d) none of these are
12. _____ Which one of the following is a chemical property?
a) It boils at $100^\circ C$ b) It's flammable c) it is less dense than water

d) It has a strong smell
13. _____ Which is a chemical change?
a) tooth decay b) grinding coffee c) ice freezing d) laundry drying
14. _____ Which of the following is **NOT** a physical property.
a) The boiling point of a certain alcohol is $78^\circ C$ c) Anthracite coal is black and shiny.

b) Sugar ferments(changes) into alcohol. d) A metal wire conducts electricity.

15. _____ The new properties observed during a change of state are not signs of a chemical change because
- a) the new properties are temporary.
 - b) the chemical identity of the substance has not been altered.
 - c) the color of the substance has changed.
 - d) a gas is not produced.
16. _____ Which of the following involves a chemical change?
- a) boiling water
 - b) melting ice
 - c) cooking an egg
 - d) none of the above
17. _____ Which of the following involves no chemical change?
- a) rusting iron
 - b) digesting food
 - c) boiling water
 - d) they all involve a chemical change
18. _____ Which of these is a chemical property?
- a) ice melts at 0°C
 - b) Sodium is a soft, shiny metal
 - c) Neon is very non reactive
 - d) Water has a high specific heat