

Chemistry

1. Define the following terms:

Elements : a species of a _____ having the same number of p_____ in its atomic nuclei

Compounds: a c_____ substance composed of many identical molecules

Chemical symbols : a _____ used in chemistry for chemical elements, functional groups and chemical compounds

Solutions: a special type of m_____ composed of two or more substances

Atoms : the s _____ particle of a chemical element that can exist.

Molecules: a group of a _____ bonded together

Periodic table: a table of the c _____ e _____ arranged in order of atomic number

Combustion : the process of b _____ something

Acid : a molecule or ion capable of donating a p _____, or, alternatively, capable of forming a covalent bond with an electron pair

Salt : a chemical compound consisting of an ionic assembly of cations and a _____

Proton : a subatomic particle, symbol p or p⁺, with a p _____ electric charge

Neutron : a s _____ particle, symbol n or n⁰, with no net electric charge

Electron: a subatomic particle, symbol e^- or β^- , whose electric charge is n _____ one

Distillation: the process of s_____ the components or substances from a liquid mixture by using selective boiling and condensation

Fractional distillation: the separation of a mixture into its c_____ parts, or fractions

Filtration : a physical, biological or chemical operation that separates solid matter and f_____

2. What gases extinguish life, and how?

Explain the principle of one kind of chemical fire extinguisher.

3. Name two common sources of carbon monoxide.

1. _____ 2. _____

Why is it dangerous?

4. What are the states of matter?

5.

Do five of the following, and explain the chemical action that takes place:

- a. Try to light a sugar cube, first without and then with some ash applied to the cube, thus showing the action of a catalyst.
Chemical action: _____

- b. Place an ice cube in a glass of water, place a four-inch (10.2 cm) string on top of the glass and ice, then solve the problem of taking the ice cube out of the water without touching it.
Chemical action: _____

- c. With the use of water, turpentine, and soap, transfer a newspaper picture to a blank sheet of paper.
Chemical action: _____

- d. With the use of a candle and a piece of cardboard, demonstrate visually the three parts of a candle flame.
Chemical action: _____

- e. With a bowl of water, wooden match sticks, a lump of sugar, and small amount soap, demonstrate the action of sugar and soap on the floating match sticks.
Chemical action: _____

- f. Place a fresh egg in fresh water and then salt water, noting the difference.
Chemical action: _____

- g. Demonstrate that rust uses up oxygen with the use of steel wool, a pencil, a rubber band, a water glass, and a dish of water.
Chemical action: _____

- h. Demonstrate the colors produced when the following are burned: salt, copper, sulfate, and boric acid.
Chemical action: _____

- i. Make an invisible ink.
Chemical action: _____

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- j. Show that washing soda or sodium carbonate contains water.
Chemical action: _____
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Date completed _____

Instructor's Signature

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