

# FCAT Questions: Atoms, Elements, & Molecules Module

<http://fcit.usf.edu/florida/teacher/science/mod3/index.html>

## Grades 9-12 Student Version

1. If an atom is electrically neutral and has 9 protons, it will also contain 9 \_\_\_\_\_.
  - a. neutrons
  - b. nuclei
  - c. electrons
  - d. energy levels
2. An atom with an atomic mass number of 238 and atomic number 92 contains \_\_\_\_\_ neutrons.
  - a. 2.59
  - b. 92
  - c. 146
  - d. 238
3. An atom will become an ion with the:
  - a. gain or loss of a proton.
  - b. gain or loss of an electron.
  - c. gain or loss of a neutron.
  - d. gain or loss of a nucleus.
4. The smallest unit of a compound that retains the properties of the compound is the:
  - a. atom
  - b. element
  - c. molecule
  - d. symbol
5. The compound ammonium dichromate,  $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ , contains \_\_\_\_\_ hydrogen atoms.
  - a. 2
  - b. 4
  - c. 6
  - d. 8

6. Which formula represents a compound:
- Fe
  - Cl
  - KF
  - Xe
7. In a chemical formula, the subscript is a small number written slightly below a symbol representing the number of:
- atoms
  - elements
  - molecules
  - bonds
8. Most elements on the Periodic Table of Elements are classified as:
- halogens
  - metals
  - nonmetals
  - noble gases
  - metalloids
9. Carbon has an atomic number of 6 and a mass number of 12. If a carbon atom is found to have 2 additional neutrons, the mass number becomes 14. This carbon atom with a greater mass is called a(n):
- ion
  - polyatomic ion
  - isotope
  - noble gas
10. An electron has a mass of \_\_\_\_\_ amu and a charge of \_\_\_\_\_ .
- 0, 0
  - 0, -1
  - 1, -1
  - 1, +1
11. The nucleus of an atom contains:
- protons only
  - neutrons only
  - protons, neutrons and electrons
  - neutrons and electrons
  - protons and neutrons

12. Which of the following is a physical change?
- a. carbon dioxide freezes to form dry ice
  - b. water is broken down into hydrogen and oxygen gas
  - c. an animal gets fatter from eating
  - d. milk is left outside and sours
13. Calcium carbonate,  $\text{CaCO}_3$ , contains \_\_\_\_\_ atoms.
- a. 3
  - b. 4
  - c. 5
  - d. 6
14. The amount of matter in an object determines its:
- a. volume
  - b. mass
  - c. size
  - d. temperature
15. The atomic number of Boron, an atom that has 6 neutrons and 5 protons, is:
- a. 5
  - b. 6
  - c. 11
  - d. 30
16. If a Lithium atom loses an electron, it becomes a Lithium \_\_\_\_\_.
- a. isotope
  - b. radiation particle
  - c. ion
  - d. compound
17. The second energy level of an atom can hold up to \_\_\_\_\_ electrons.
- a. 2
  - b. 6
  - c. 8
  - d. 10
  - e. 18

18. Each of the following is a compound except:
- a. salt
  - b. sugar
  - c. vinegar
  - d. sulfur
19. Carbon dioxide is covalently bonded by the
- a. gaining of electrons
  - b. transfer of electrons
  - c. losing of electrons
  - d. sharing of electrons
20. Oxygen has \_\_\_\_\_ electrons in its outermost energy level.
- a. 2
  - b. 6
  - c. 8
  - d. 16