

FCAT Questions: Atoms, Elements, & Molecules Module

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Grades 9-12 Teacher 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, 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

ANSWERS:

- 1.c
- 2.c
- 3.b
- 4.c
- 5.d
- 6.c
- 7.a
- 8.b
- 9.c
- 10.b
- 11.e
- 12.a
- 13.c
- 14.b
- 15.a
- 16.c
- 17.c
- 18.d
- 19.d
- 20.b