Molecules

1. What is a molecule?

a) A single atom

b) A group of atoms bonded together

c) A type of cell

d) A small particle with no atoms

2. Which of the following is a molecule?

a) Oxygen (O_2)

b) Gold (Au)

c) Hydrogen ion (H^+)

d) Neutron

3. What holds atoms together in a molecule?

a) Gravity

b) Magnetic force

c) Chemical bonds

d) Electric current

4. Which of these is a compound molecule?

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a) H_2 b) O_2 c) CO_2 d) N_2

5. What is the smallest part of a compound that still retains its properties?

a) Atom b) Electron c) Nucleus d) Molecule

6. Water is made of which atoms?

a) One hydrogen and one oxygen

b) Two oxygen and one hydrogen

c) Two hydrogen and one oxygen

d) Three oxygen

7. Which of the following is not a molecule?

a) H_2O b) CO_2 c) NaCl d) O_3

8. What is the molecular formula of carbon dioxide?

a) CO b) C_2O c) CO_2 d) C_2O_2

9. How are molecules different from atoms?

a) Molecules are smaller than atoms

b) Molecules are single particles with no charge

c) Molecules are made of two or more atoms

d) Molecules are made of only one type of atom

10. Which of the following is a molecular element?

a) CO_2 b) H_2 c) NaCl d) CH_4

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11. What best defines a molecular compound?

a) A compound made of metal atoms

b) A compound formed from ions

c) A compound made of nonmetal atoms bonded covalently

d) A mixture of different molecules

12. Which of the following is a molecular compound?

a) O_2 b) N_2 c) HCl d) NaOH

13. Which statement is true about molecular elements?

a) They are always made of different kinds of atoms

b) They are usually metals

c) They are made of the same type of atom bonded together

d) They do not form bonds

14. What is the main difference between a molecular element and a molecular compound?

a) A molecular element contains different types of atoms, while a molecular compound contains the same type.

b) A molecular element is made of only one type of atom, while a molecular compound is made of different types of atoms.

c) A molecular element always contains metals, while a molecular compound does not.

d) A molecular element is always a solid, while a molecular compound is always a gas.

15. Which of the following is a diatomic molecular element?

a) He b) H_2 c) C d) CO_2

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16. Which group of elements typically forms diatomic molecules?

a) Noble gases
b) Alkali metals
c) Halogens
d) Transition metals

17. Which of the following is not a diatomic molecular element?

a) N_2
b) O_2
c) S_8
d) F_2

18. Which of the following is a monoatomic molecular element?

a) He
b) O_2
c) S_8
d) Cl_2

19. Which molecular element is polyatomic?

a) O_2
b) N_2
c) S_8
d) H_2

20. Which of the following correctly matches the type of molecular element with an example?

a) Monoatomic – O_2
b) Diatomic – Cl_2
c) Polyatomic – He
d) Diatomic – S_8

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