

Atoms and Bonding • Chapter Test B

Atoms and Bonding

Multiple Choice

Write the letter of the correct answer on the line at the left.

- _____ 1. The electrons of an atom that are at the highest energy level are called
- positive electrons.
 - ionic electrons.
 - valence electrons.
- _____ 2. What is a representation of an atom's valence electrons that uses chemical symbols and dots?
- chemical formula
 - electron dot diagram
 - molecular compound
- _____ 3. A period of the periodic table ends when the highest energy level of an element's atoms has
- four electrons.
 - six electrons.
 - eight electrons.
- _____ 4. The inert gas Neon has eight valence electrons and, as a result, is
- stable.
 - very reactive.
 - shiny.
- _____ 5. An atom with an electric charge is called a(an)
- compound.
 - ion.
 - neutron.
- _____ 6. MgCl_2 is an example of a(an)
- electron dot diagram.
 - element.
 - chemical formula.
- _____ 7. A neutral group of atoms joined by covalent bonds is a(an)
- ion.
 - molecule.
 - element.

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- _____ 8. A covalent bond in which the atoms equally share a pair of electrons is called
 - a. polar.
 - b. nonpolar.
 - c. ionic.

- _____ 9. An attraction between a positive metal ion and the valence electrons surrounding it is a(an)
 - a. ionic bond.
 - b. covalent bond.
 - c. metallic bond.

- _____ 10. Metals are easy to bend because
 - a. metal ions can be pushed out of position.
 - b. metals form covalent bonds.
 - c. metals are brittle.

Completion

Read each word in the box. In each sentence below, fill in the correct word or words. Not all of the words will be used.

double bond	eight	elements	ionic
chemical bond	alloy	positive	

- 11. The force of attraction that holds two atoms together is called a(an) _____.
- 12. Most atoms are less likely to react with other atoms when they have _____ valence electrons.
- 13. When an atom loses an electron, a(an) _____ ion forms.
- 14. When two atoms share two pairs of electrons, a(an) _____ forms.
- 15. A mixture made of two or more elements that has the properties of metal is a(an) _____.

Atoms and Bonding ▪ Chapter Test B**True or False**

If a statement is true, write true. If it is false, write false.

- _____ 16. Neutrons are particles in the nucleus of an atom that have no electric charge.
- _____ 17. The most stable elements in the periodic table are the halogens.
- _____ 18. Ionic compounds have a negative electric charge.
- _____ 19. Atoms in polar covalent bonds carry slight electric charges.
- _____ 20. Metals are poor conductors of heat.

Using Science Skills

The diagram below is an electron dot diagram. Use the diagram to answer questions 21 and 22.

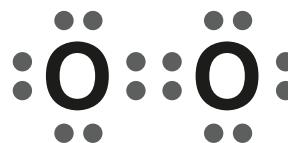


- _____ 21. **Interpreting Diagrams** How many valence electrons does an atom of chlorine have?
- 1
 - 7
 - 8
- _____ 22. **Predicting** How many more electrons are needed to make a chlorine atom stable?
- 1
 - 7
 - 8

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Using Science Skills

Four electron dot diagrams are shown below. Use the diagrams to answer questions 23, 24, and 25.



- _____ 23. **Interpreting Diagrams** What kind of bonds do these compounds have?
- ionic bonds
 - covalent bonds
 - metallic bonds
- _____ 24. **Applying Concepts** Which compound has a polar bond?
- HF
 - F₂
 - O₂
- _____ 25. **Applying Concepts** Which compound has a triple bond?
- O₂
 - F₂
 - N₂