



Answer the questions below then check your answers.

1. Which of the following best describes a covalent bond?

- a) Transfer of electrons from one atom to another*
- b) Sharing of electron pairs between atoms*
- c) Attraction between oppositely charged ions*
- d) Attraction between atoms with high electronegativity*

2. A polar covalent bond is formed when:

- a) Two atoms share electrons equally*
- b) Two atoms share electrons unequally*
- c) Electrons are transferred completely from one atom to another*
- d) Two atoms have the same electronegativity*

3. Electronegativity is defined as:

- a) The energy required to remove an electron from an atom
- b) The energy released when an atom gains an electron
- c) The ability of an atom to attract electrons in a chemical bond
- d) The ability of an atom to repel electrons in a chemical bond

4. Which of the following factors affects the electronegativity of an element?

- a) Atomic radius
- b) Number of neutrons
- c) Colour of the element
- d) Phase of the element

5. Which element has the highest electronegativity?

- a) Hydrogen
- b) Oxygen
- c) Fluorine
- d) Chlorine

6. Electronegativity tends to increase:

- a) Down a group in the periodic table
- b) Across a period from left to right
- c) In metals
- d) As atomic radius increases

7. Which of the following is true about covalent bonds?

- a) They involve the transfer of electrons
- b) They occur between metals and non-metals
- c) They result in the formation of ions
- d) They involve the sharing of electrons

8. The unequal sharing of electrons in a bond leads to:

- a) Ionic bonding
- b) Nonpolar covalent bonding
- c) Polar covalent bonding
- d) Metallic bonding

9. As you move down a group in the periodic table, electronegativity generally:

- a) Increases
- b) Decreases
- c) Remains the same
- d) Fluctuates unpredictably

10. Which of the following statements about electronegativity is true?

- a) Electronegativity increases with increasing atomic size
- b) Electronegativity decreases across a period from left to right
- c) Electronegativity is higher for elements with more shielding
- d) Electronegativity increases with increasing nuclear charge

11. A bond between two atoms with identical electronegativity is:

- a) Ionic
- b) Polar covalent
- c) Nonpolar covalent
- d) Metallic

12. In a polar covalent bond between hydrogen and chlorine, which atom will have a partial negative charge?

- a) Hydrogen
- b) Chlorine
- c) Both hydrogen and chlorine
- d) Neither hydrogen nor chlorine

13. Electronegativity differences can be used to predict:

- a) The phase of a substance b) The polarity of a bond
c) The colour of a compound d) The solubility of a substance

14. Which pair of elements would form a bond with the greatest polarity?

- a) H and H b) H and Cl c) Cl and Cl d) Na and Na

15. Which element is least likely to form a polar covalent bond with hydrogen?

- a) Fluorine b) Oxygen c) Nitrogen d) Carbon

16. The trend in electronegativity across Period 2 of the periodic table is:

- a) Decreasing b) Increasing c) Constant d) Unpredictable

Answer: b) Increasing

17. Electronegativity generally decreases down a group because:

- a) The atomic radius decreases b) The nuclear charge decreases
c) The shielding effect increases d) The number of protons decreases

18. Which of the following bonds is the most polar?

- a) C-H b) C-O c) H-O d) O-O

19. Which of the following statements is false about electronegativity?

- a) It is a dimensionless quantity b) It is higher in metals than in non-metals
c) It varies across the periodic table d) It influences bond polarity

20. Electronegativity values are useful for predicting:

a) Atomic radius b) Melting points c) Bond type

d) Isotopic abundance

Answer: c) Bond type

Answers

1. Answer: b) Sharing of electron pairs between atoms
2. Answer: b) Two atoms share electrons unequally
3. Answer: c) The ability of an atom to attract electrons in a chemical bond
4. Answer: a) Atomic radius
5. Answer: c) Fluorine
6. Answer: b) Across a period from left to right
7. Answer: d) They involve the sharing of electrons
8. Answer: c) Polar covalent bonding
9. Answer: b) Decreases
10. Answer: d) Electronegativity increases with increasing nuclear charge
11. Answer: c) Nonpolar covalent
12. Answer: b) Chlorine
13. Answer: b) The polarity of a bond
14. Answer: b) H and Cl
15. Answer: d) Carbon
16. Answer: b) Increasing
17. Answer: c) The shielding effect increases
18. Answer: c) H-O

19. Answer: b) It is higher in metals than in non-metals

20 Answer: c) Bond type