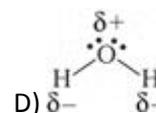
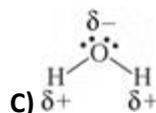
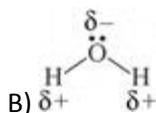
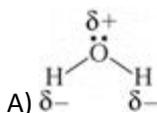


9. Which of these gases is not hazardous to breathe in low concentration?
- A) nitrogen dioxide (NO₂) B) sulfur dioxide (SO₂)
 C) carbon monoxide (CO) **D) carbon dioxide (CO₂)**
10. Which of these gases is not part of the exhaust of an automobile engine?
- A) water vapor B) carbon dioxide C) carbon monoxide **D) ozone**
11. If CO is named carbon monoxide, CO₂ is named carbon dioxide, N₃O₄ is named trinitrogen tetroxide, what would you name N₂O?
- A) nitrogen oxide B) dinitrogen oxide
 C) nitrogen monoxide **D) dinitrogen monoxide**
12. Most of the Earth's fresh water supply is found
- A) in the world's oceans.
 B) in plant material, such as tree roots.
 C) as clouds in the atmosphere.
D) in ice caps, glaciers, and ground water.

13. A covalent bond is _____.
- A) a stick connecting two atoms in a molecule.
B) a pair of electrons shared by two atoms.
 C) an electrostatic attraction between ions of opposite charges.
 D) the same as hydrogen bond.

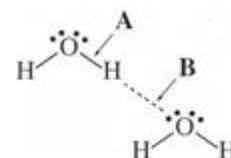
14. Which of the following shows the correct structure and charge distribution in a water molecule?



15. Which of the following is TRUE when an electrolyte is dissolved in water?
- A) Electrolyte produces ions and conducts electricity.**
 B) Electrolyte produces ions and doesn't conduct electricity.
 C) Electrolyte doesn't produce ions but conducts electricity.
 D) Electrolyte doesn't produce ions and doesn't conduct electricity.

16. The figure below represents water molecules in a raindrop. What types of bond are bond A and bond B, respectively?

- A) Bond A is a hydrogen bond, bond B is a covalent bond
- B) Bond A is a covalent bond, bond B is a hydrogen bond**
- C) Both bond A and bond B are covalent bond
- D) Both bond A and bond B are hydrogen bond



17. Which of the following is true about covalent bonds and hydrogen bonds?

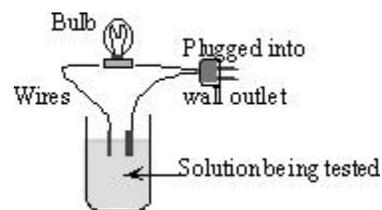
- A) A covalent bond is a type of bond between molecules; a hydrogen bond is a type of bond inside a molecule.
- B) A covalent bond is a type of bond inside a molecule; a hydrogen bond is a type of bond between molecules.**
- C) Both covalent bonds and hydrogen bonds are bonds between molecules.
- D) Both covalent bond and hydrogen bond are bonds inside a molecule.

18. Which of the following is TRUE for a solution?

- A) Only one solute can be present in a given amount of solvent.
- B) The solute and solvent are present in equal amounts.
- C) The solute cannot be separated from the solvent by simple filtration.**
- D) The solute must be a solid and the solvent must be a liquid.

19. When sugar, $C_{12}H_{22}O_{11}$, is dissolved in water and tested for conductivity using the apparatus shown, the light bulb will _____; sugar is a(n) _____.

- A) light up, electrolyte
- B) light up, nonelectrolyte
- C) not light up, electrolyte
- D) not light up, nonelectrolyte**



20. A certain bottled water company advertises that its water has been treated so that there are "clusters" of water molecules that can more effectively penetrate through cell walls to provide maximum hydration. Below is a representation of such a cluster. Why is this arrangement of clustered water molecule unlikely?

- A) Water in the liquid state is in regular clusters of six molecules, not five.
- B) Oxygen atoms in water all have the same partial charge and like charges repel.**
- C) There are no intermolecular attractions between water molecules.
- D) Each water molecule is only attracted to one other water molecule.

