

Name: _____

Date: _____

- 1 A molecule is formed when two or more atoms form a covalent bond. According to this definition, which of these is NOT a molecule?
- A NaCl
 B H₂
 C HCl
 D NH₃

Use the table below to answer question 2.

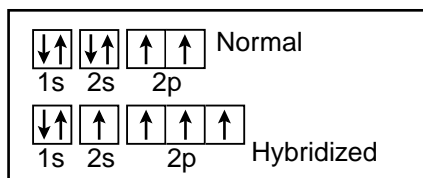
Number of Atoms	Prefix	Number of Atoms	Prefix
1	mono-	6	hexa-
2	di-	7	hepta-
3	tri-	8	octa-
4	tetra-	9	nona-
5	penta-	10	deca-

- 2 The table shows some of the prefixes used to name binary covalent compounds. What name would be given to the compound PBr₅?
- A Phosphorus tetrabromide
 B Monophosphorus pentabromide
 C Phosphorus pentabromide
 D Phosphorus hexabromide
- 3 In the polyatomic ion NH₄⁺, the formation of a coordinate covalent bond between nitrogen and hydrogen involves —
- A hydrogen transferring a pair of electrons to nitrogen
 B nitrogen transferring a pair of electrons to hydrogen
 C hydrogen donating a pair of electrons to be shared with nitrogen
 D nitrogen donating a pair of electrons to be shared with hydrogen
- 4 When hydrogen and fluorine combine, a polar covalent bond is formed. Which of these formulas is the *best* way to express this relationship?
- A H – F
 B δ⁺ H – Fδ⁻
 C H : F
 D H : $\overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{F}}}$:

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- 5 At room temperature, iodine (I_2) is a solid and bromine (Br_2) is a liquid. These molecules have different melting points because of stronger —
- A covalent bonds in iodine
 - B covalent bonds in bromine
 - C intermolecular forces in iodine
 - D intermolecular forces in bromine

Use the diagram below to answer question 6.



- 6 The diagram shows the electron configuration of a normal carbon atom and the rearrangement of electrons to form four new identical orbits in a hybridized carbon atom. This type of hybrid orbital is called an —
- A s^2 orbital
 - B sp orbital
 - C sp^2 orbital
 - D sp^3 orbital

- 7 Which of these is the chemical formula for sulfurous acid?
- A H_2S
 - B H_2SO_3
 - C H_2SO_4
 - D H_2S
- 8 The bond that holds two fluorine atoms together in an F_2 molecule would be classified as nonpolar covalent because —
- A both atoms are different and the difference in electronegativity is large
 - B both atoms are different and the difference in electronegativity is zero
 - C both atoms are the same and the difference in electronegativity is large
 - D both atoms are the same and the difference in electronegativity is zero

