Covalent Bonding Questions

1. Draw Lewis structures for the following molecular compounds:

а.	F _{2 (g)}	с.	CH _{4 (g)}	e.	H ₂ S _(g)
b.	H ₂ O (I)	d.	PCl _{3 (s)}	f.	SiO _{2 (s)}

2. Draw Lewis structures for each of the following molecules:

- a. H_{2 (g)} c. OF_{2 (g)} e. N₂H_{2 (g)}
- b. O_{3 (g)} d. NF_{3 (g)} f. P₂H_{4 (g)}
- 3. Draw a Lewis structure for the following polyatomic ion: OH^{-} (aq)
- 4. Distinguish between bonding electrons and lone pairs.

5. Are the following pairs of atoms more likely to form ionic compounds or covalent bonds?

- a. sulfur and oxygen c. calcium and chlorine
- b. iodine and iodine d. potassium and bromine
- $6. \qquad a. \ Use \ a \ Lewis \ dot \ diagram \ to \ explain \ the \ formula \ for \ nitrogen, \ N_2.$
 - b. Draw the Lewis structure for nitrogen.
 - c. Nitrogen is a fairly inert (unreactive) gas. Explain this, referring to the bond involved.
- 7. Illustrate the formation of each of the following molecular compounds, using Lewis dot diagrams and Lewis structures.
 - a. HCl c. H₂S
 - b. NH₃ d. CO₂
- 8. Is it correct for the structural diagram of H_2S to be written H-H-S? Explain using a diagram.

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- 1. Draw Lewis structures for the following molecular compounds:
 - a. $F_{2 (g)}$ c. $CH_{4 (g)}$ e. $H_2S_{(g)}$
 - b. $H_2O_{(1)}$ d. $PCI_{3(s)}$ f. $SiO_{2(s)}$

2. Draw Lewis structures for each of the following molecules:

- a. $H_{2(g)}$ c. $OF_{2(g)}$ e. $N_2H_{2(g)}$ b. $O_{3(q)}$ d. $NF_{3(q)}$ f. $P_2H_{4(q)}$
- 3. Draw a Lewis structure for the following polyatomic ion: OH⁻ (aq)
- 4. Distinguish between bonding electrons and lone pairs.

5. Are the following pairs of atoms more likely to form ionic compounds or covalent bonds?

- a. sulfur and oxygen c. calcium and chlorine
- b. iodine and iodine d. potassium and bromine
- 6. a. Use a Lewis dot diagram to explain the formula for nitrogen, N_2 .
 - b. Draw the Lewis structure for nitrogen.
 - c. Nitrogen is a fairly inert (unreactive) gas. Explain this, referring to the bond involved.
- 7. Illustrate the formation of each of the following molecular compounds, using Lewis dot diagrams and Lewis structures.

c. H₂S

d. CO_2

- b. NH₃

a. HCl

8. Is it correct for the structural diagram of H_2S to be written H-H-S? Explain using a diagram.