

Chapter 8 Practice Problems

Instructions: Complete the following problems by (1) drawing the electron dot structure to the right and (2) answering the following questions.

1. Draw the Lewis structure for F_2O in the space on the right.
 - a. On central atom, Bonding Groups _____ Lone Pairs _____
 - b. State the molecular geometry: _____
Electron geometry? _____
 - c. State the hybridization on the central atom: _____
 - d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
 - e. Polar or nonpolar? _____

2. Draw the Lewis structure for XeF_4 in the space on the right.
 - a. On central atom, Bonding Groups _____ Lone Pairs _____
 - b. State the molecular geometry: _____
Electron geometry? _____
 - c. State the hybridization on the central atom: _____
 - d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
 - e. Polar or nonpolar? _____

3. Draw the Lewis structure for SiF_4 in the space on the right.
 - a. On central atom, Bonding Groups _____ Lone Pairs _____
 - b. State the molecular geometry: _____
Electron geometry? _____
 - c. State the hybridization on the central atom: _____
 - d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
 - e. Polar or nonpolar? _____

4. Draw the Lewis structure for CO_3^{2-} in the space on the right.
 - a. On central atom, Bonding Groups _____ Lone Pairs _____
 - b. State the molecular geometry: _____

Electron geometry? _____

- c. State the hybridization on the central atom: _____
- d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
- e. Polar or nonpolar? _____

5. Draw the Lewis structure for BrF_5 in the space on the right.

- a. On central atom, Bonding Groups _____ Lone Pairs _____
- b. State the molecular geometry: _____
Electron geometry? _____
- c. State the hybridization on the central atom: _____
- d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
- e. Polar or nonpolar? _____

6. Draw the Lewis structure for N_2 in the space on the right.

- a. On central atom, Bonding Groups _____ Lone Pairs _____
- b. State the molecular geometry: _____
Electron geometry? _____
- c. State the hybridization on the central atom: _____
- d. How many total sigma bonds are in the molecule? ____ Pi bonds? _____
- e. Polar or nonpolar? _____