**Chemistry 20 – Lesson 9**
**Lewis diagrams**

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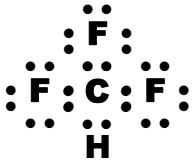
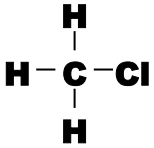
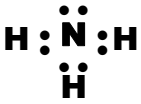
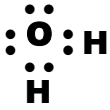
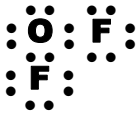
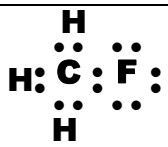
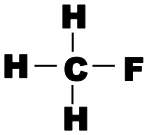
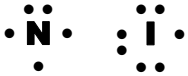
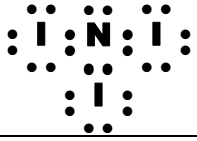
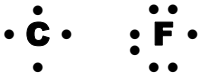
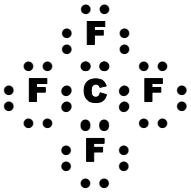
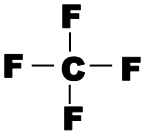
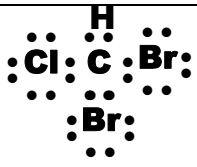
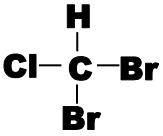
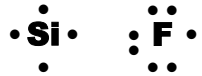
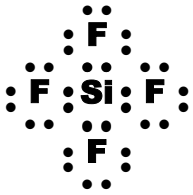
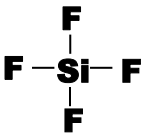
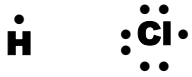
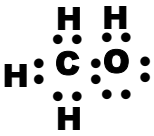
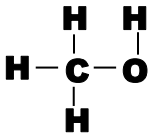
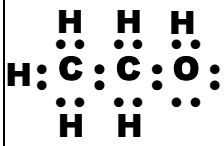
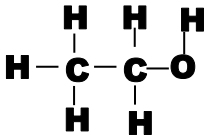
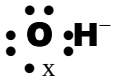
## Part A

| Atom | # Valence $e^-$ | # Orbitals | Lewis Diagram | # Lone pairs | # Bonding $e^-$ |
|---|---|---|---|---|---|
| S | 6 | 4 |  | 2 | 2 |
| Si | 4 | 4 |  | 0 | 4 |
| P | 5 | 4 |  | 1 | 3 |
| Cl | 7 | 4 |  | 3 | 1 |
| Br | 7 | 4 |  | 3 | 1 |
| Be | 2 | 4 |  | 0 | 2 |

**Part B**

| Molecular Substance | Molecular Formula | Lewis Diagrams of each atom | Lewis diagram of Molecule | Structural diagram |
|---|---|---|---|---|
| chloroform | $CHCl_3$ |  |  |  |
| ammonia | $NH_3$ |  |  |  |
| water | $H_2O$ |  |  |  |
| bromine | $Br_2$ |  |  |  |
| oxygen difluoride | $OF_2$ |  |  |  |
| fluoromethane | $CH_3F$ |  |  |  |
| chlorine | $Cl_2$ |  |  |  |
| nitrogen triodide | $NI_3$ |  |  |  |
| carbon tetrafluoride | $CF_4$ |  |  |  |
| dibromo-chloromethane | $CHBr_2Cl$ |  |  |  |

| | | | | |
|---|---|---|---|---|
| silicon tetrafluoride | $SiF_4$ |  |  |  |
| hydrogen chloride | HCl |  |  |  |
| methanol | $CH_3OH$ |  |  |  |
| ethanol | $C_2H_5OH$ |  |  |  |
| hydroxide | $OH^-$ |  |  |  |