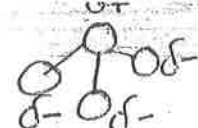
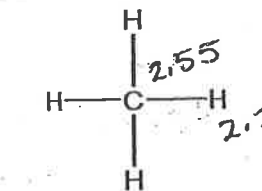
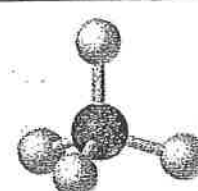
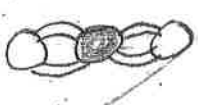
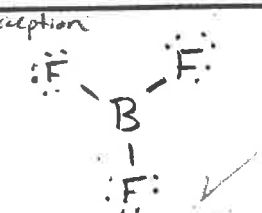
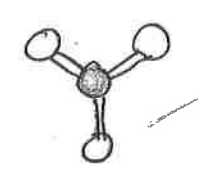
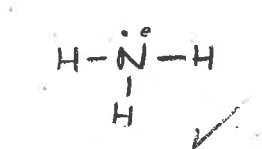
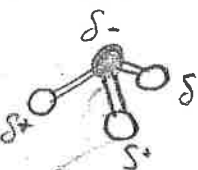
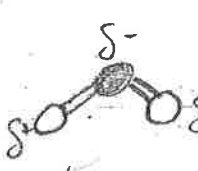
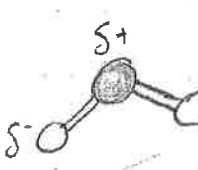
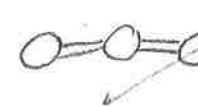
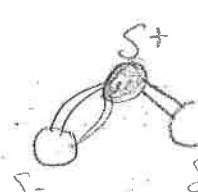
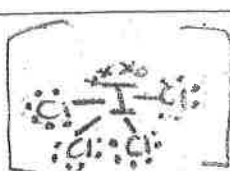
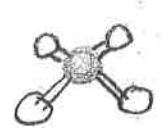

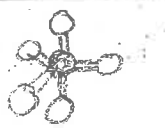
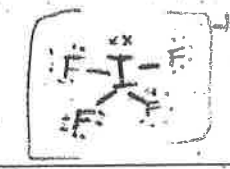
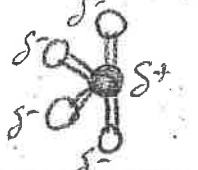
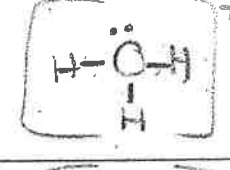
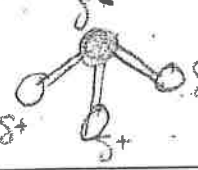

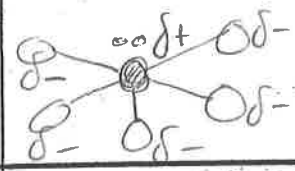

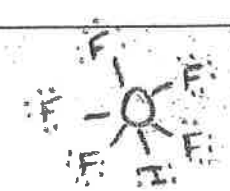
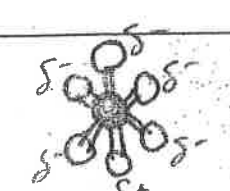
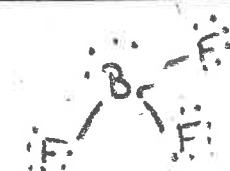
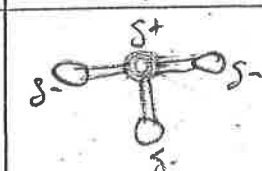
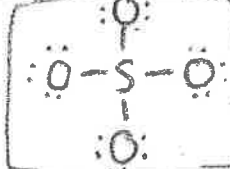

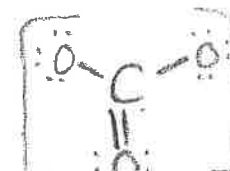



PCl_3 $\begin{array}{c} \text{Cl} \\ | \\ \text{Cl}-\text{P}-\text{Cl} \\ | \\ \text{Cl} \end{array}$ tetrahedral ~~non-polar~~ polar $\Delta\text{EN}=0.97$ trigonal pyramidal polar 

Molecular Geometry Report Sheet

| Molecular formula | Lewis structure | Electron-group geometry | Bond angle & Polarity | Molecular geometry | Sketch (With bond dipoles) | MOLECULE Polar or nonpolar? |
|----------------------|--|-------------------------|--|--------------------|---|-----------------------------|
| CH_4 |  | tetrahedral | 109° non-polar $\Delta\text{EN}=0.32$ | tetrahedral |  | nonpolar |
| CO_2 | $\text{:O}=\text{C}=\text{O:}$ | Linear | 180° polar $\Delta\text{EN}=0.89$ | linear |  | nonpolar |
| BF_3 | exception  | Trigonal Planar | 120° polar $\Delta\text{EN}=1.94$ | Trigonal Planar |  | Nonpolar |
| NH_3 |  | Tetrahedral | 107° Polar $\Delta\text{EN}=0.84$ | Trigonal Pyramidal |  | Polar (base) |
| H_2O | $\text{H}-\ddot{\text{O}}-\text{H}$ | Tetrahedral | 104.5° Polar $\Delta\text{EN}=1.24$ | Bent |  | Polar |
| SCl_2 | $\text{Cl}-\ddot{\text{S}}-\text{Cl}$ | Tetrahedral | 104.5° Polar $\Delta\text{EN}=0.58$ | Bent |  | Polar |
| I_3^- | $\left[\text{:I}-\ddot{\text{I}}-\ddot{\text{I}}: \right]^-$ | Trigonal bipyramidal | 180° Non-polar $\Delta\text{EN}=0$ | Linear |  | Nonpolar |
| SO_2 | $\text{:O}=\ddot{\text{S}}-\ddot{\text{O}}:$ | Trigonal Planar | 104.5° Polar $\Delta\text{EN}=0.86$ | Bent |  | Polar |

| Molecular formula | Lewis structure | Electron-group geometry | Bond angle | Molecular geometry | Sketch | Polar or nonpolar? |
|------------------------|---|-------------------------|---|----------------------|---|--------------------|
| Cl_4^- |  | Octahedral | 90° Polar $\Delta\text{EN}=0.5$ | Square Planar |  | Nonpolar |
| AsF_5 |  | Trigonal Bipyramidal | $120^\circ + 90^\circ$ Polar $\Delta\text{EN}=1.8$ | Trigonal Bipyramidal |  | Nonpolar |
| IF_4^+ |  | Trigonal Bipyramidal | $120^\circ + 90^\circ$ Polar 180° $\Delta\text{EN}=1.32$ | Seesaw |  | Polar |
| H_3O^+ |  | Tetrahedral | 109.5° Polar $\Delta\text{EN}=1.24$ | Trigonal Pyramidal |  | Polar |
| TeF_5^- |  | Octahedral | 90° Polar $\Delta\text{EN}=1.88$ | Square Pyramidal |  | Polar |
| HCN | $\text{H}-\text{C}\equiv\text{N:}$ | Linear | 180° Polar + Nonpolar $\Delta\text{EN}=0.49$ $\Delta\text{EN}=0.35$ | Linear |  | Polar |
| IOF_5 |  | Octahedral | 90° Polar $\Delta\text{EN}=0.54$ $\Delta\text{EN}=0.78$ | Octahedral |  | Polar |
| BrF_3 |  | Trigonal Bipyramidal | $120^\circ, 90^\circ$ Polar $\Delta\text{EN}=1.02$ | T-shaped |  | Polar |
| SO_4^{2-} |  | Tetrahedral | 109.5° Polar $\Delta\text{EN}=0.86$ | Tetrahedral |  | Nonpolar |
| CO_3^{2-} |  | Trigonal Planar | 120° Polar $\Delta\text{EN}=0.89$ | Trigonal Planar |  | Nonpolar |