

QUESTIONS

For each of the following molecules, draw a Lewis structure and predict the molecular geometry, hybridization, overall polarity and IMF exhibited by the molecule. Draw your final diagram as a 3-dimensional structure. The following geometries may be used: linear, trigonal planar, tetrahedral (as well as the variations of tetrahedral—trigonal pyramidal and bent), trigonal bipyramidal, and octahedral.

Initial Lewis Structure

Shape & Hybridization

Final 3-D Structure

1. BeH_2



Shape: linear

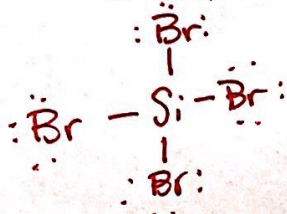
Polarity: Non-Polar

Hybridization: sp

IMF exhibited: LDF



2. SiBr_4

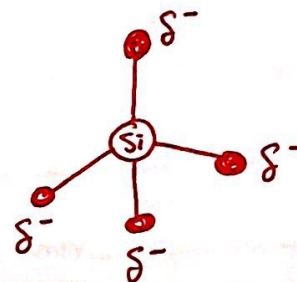


Shape: tetrahedral

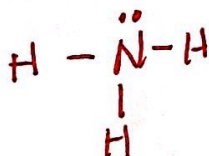
Polarity: Non-Polar

Hybridization: sp³

IMF exhibited: LDF



7. NH_3

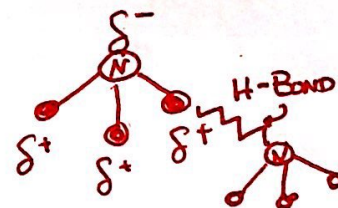


Shape: trigonal pyramidal

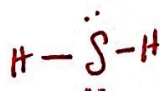
Polarity: Polar

Hybridization: sp³

IMF exhibited: LDF, Dipole-Dipole, H-Bond



8. H_2S

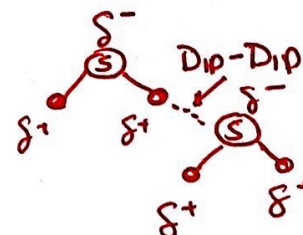


Shape: Bent

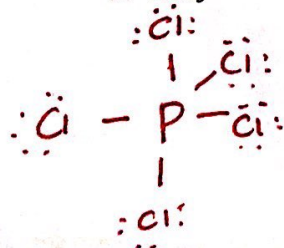
Polarity: Polar

Hybridization: sp³

IMF exhibited: LDF, Dipole-Dipole



9. PCl_5



Shape: trigonal bipyramidal

Polarity: Non-Polar

Hybridization: sp³d

IMF exhibited: LDF

