

2006 AP[®] CHEMISTRY FREE-RESPONSE QUESTIONS (Form B)



6. The species represented above all have the same number of chlorine atoms attached to the central atom.
- (a) Draw the Lewis structure (electron-dot diagram) of each of the four species. Show all valence electrons in your structures.
- (b) On the basis of the Lewis structures drawn in part (a), answer the following questions about the particular species indicated.
- (i) What is the $\text{Cl} - \text{Ge} - \text{Cl}$ bond angle in GeCl_4 ?
 - (ii) Is SeCl_4 polar? Explain.
 - (iii) What is the hybridization of the I atom in ICl_4^- ?
 - (iv) What is the geometric shape formed by the atoms in ICl_4^+ ?