

CHEM106 Quiz 5

Name on back please...

Please show all work and all equations to receive any credit

1. Compare the boiling points of NH_3 , PH_3 , and AsH_3 . Identify all intermolecular forces involved between like molecules of each and clearly explain the underlying reasons for your predicted order.
2. For the highest boiling substance identified in problem 1, draw the Lewis structure for two of these molecules and clearly show how they most effectively interact.
3. There has been a great deal of discussion in the news recently about uranium enrichment capabilities in Iran and North Korea. During the enrichment process, uranium is converted into uranium hexafluoride, UF_6 , which is a gas at room temperature. Explain why UF_6 is a gas while uranium is a solid at room temperature.
4. Define specifically what is meant by lattice energy and compare the lattice energies of MgO , CaS , and CaO . Use Coulomb's Law to clearly explain the reason for your prediction in terms of fundamental physical principles.