

Lewis electron-dot diagrams and sketches of molecules may be helpful as part of your explanations. For each observation, your answer must include references to all substances.

- (a) The bonds in nitrite ion, NO_2^- , are shorter than the bonds in nitrate ion, NO_3^- .
- (b) HClO_3 is a stronger acid than HClO .
- (c) The atoms in a C_2H_4 molecule are located in a single plane, whereas those in a C_2H_6 molecule are not.
- (d) The shape of a PF_5 molecule differs from that of an IF_5 molecule.
- (e) What is the expected trend in the melting points of the compounds LiF , NaCl , KBr , and CsI ? Explain this trend using bonding principles.

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