**Ionic/Covalent/Metallic Properties**

In each of the following sets of compounds, one is ionic, one is covalent, and one is a metal. I will give the properties of a material that is one of these three choices and I would like you to determine which type of material it is, giving your reasons for believing so. Here’s a sample question to describe what I mean:

* Sample: This material conducts electricity when dissolved in water.
* Answer: It is ionic, because ionic compounds conduct electricity when they are melted or dissolved. Moving ions cause electricity to be conducted.

1) This material conducts electricity as a solid.

2) This material has a low melting point.

3) This material is hard and brittle.

4) This material is structured such that the molecules act like the beads in a bean bag chair in relation to one another.

5) This material never conducts electricity.