PHYS 32 Chap-2 Hwk-2 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

$$\% Ionic Character=\left[1-e^{-0.25\left(X\_{A}-X\_{B}\right)^{2}}\right]x100$$



1. Generate a spreadsheet that computes %IC of a bond between atoms of two elements, when the user inputs values for the elements’ electronegativities.

2. Compute the percent ionic character of the inter-atomic bonds for the following compounds: ZnTe, CsCl, InSb, and MgCl2. The electronegativity values are given above.

3. (a**)** Calculate %IC of the interatomic bonds for the intermetallic compound Al6Mn.

(b)On the basis of this result, what type of interatomic bonding would you expect to be found in Al6Mn?

4. Briefly cite the main differences among ionic, covalent, and metallic bonding.

5. Explain why hydrogen fluoride (HF) has a higher boiling temperature than hydrogen chloride (HCl) (19.4°C vs. −85°C), even though HF has a lower molecular weight.