

Worksheet 5

1. Write the electron configuration for scandium, Sc. How many valence electrons does this atom possess? What distinguishes these valence electrons from the other electrons in the atoms?
2. Write the Lewis symbol for atoms of the following elements: **a)** K, **b)** Al, **c)** Xe, and **d)** S
3. Using Lewis symbols, diagram the reaction between magnesium and oxygen atoms to give the ionic substance MgO.
4. Explain the following trends in lattice energy: **a)** $\text{MgO} > \text{MgCl}_2$, **b)** $\text{NaCl} > \text{RbBr} > \text{CsBr}$
5. Using only the periodic table as your guide select the most electronegative atom in each list:
a) As, Se, Br, I
b) Ge, Si, Sb, P
6. Draw Lewis structures for the following molecules: **a)** CCl_4 , **b)** BCl_3 , **c)** SCl_2 , **d)** NH_4^+ , **e)** CS_2