SCH 4U

**UNIT 1 – STRUCTURE AND PROPERTIES OF MATTER REVIEW**

1. a) Write a full electron configuration for an element with 46 protons.

b) State the quantum numbers for each of the valence electrons of selenium.

1. a) Draw the Lewis structure for ClF5.

b) Determine the type of hybrid orbitals used in the bonding of the molecule, and show your work.

c) Determine the VSEPR shape around the central atom.

d) Determine whether the molecule is polar or non-polar.

e) State the intermolecular forces that would attract these molecules to each other.

f) Predict the properties of the solid state of this compound.

1. Repeat the above question for the molecule shown:

O−H

O=S−O−H

O

1. State the number of sigma bonds and the number of pi bonds in the molecule shown in #3.
2. If a molecule with the formula AY3 is polar, identify one molecular shape that this molecule could have, and one it could not have due to this polarity. Explain your choices.

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