LEARNING AS ONE NATION

Expanded Project

SHS LEARNING ACTIVITY

Name: _____ **Score/Mark:** _____

Grade and Section: _____ **Date:** _____

Strand: ☐ STEM ☐ ABM ☐ HUMSS ☐ ICT (*TVL Track*)

Subject: *Physical Science (Chemistry)*

Type of Activity: ☑ Concept Notes ☑ Skills: Exercise/Drill ☐ Illustration ☐ Performance Task ☐ Essay/Report ☐ Others: _____

Activity Title: **LA06: Electronegativity and Bond Formation**

Learning Targets:
1) To define electronegativity and describe its general trend in the periodic table of elements.
2) To describe types of chemical bonds.

References: *(Author, Title, Pages)*
1) Chang, R. (2010). *Chemistry*, 10th edition, p. 367;
2) Bruice, P. Y. (2011). *Organic Chemistry*, 6th edition, pp. 9 & 27–28;
3) Sadudaquil, J. A. *CVIF–DLP Learning Activities*

Electronegativity – property of an element to pull or attract electrons toward itself, especially in a bond.

Linus Pauling – an American chemist and engineer who devised an electronegativity scale for elements, with values which are not absolute, and are relative to a certain element. Some values are given in **Fig. 2** below.

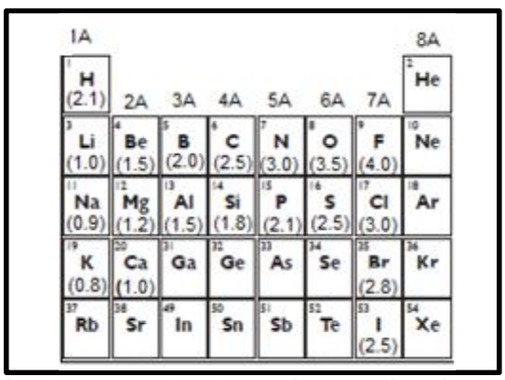

Figure 2. Electronegativity values of selected elements.

Bond – formed by **attractive forces** between atoms or ions. The **octet rule** can be used as a basic guide in bond formation.

Ionic bond – results from the electrostatic interaction between a cation and an anion (attractive force between opposite charges).
– **valence electrons** are **transferred** from a cation (usually a metal) to an anion (usually a nonmetal).

Covalent bond – results from the **sharing** of **valence electrons** of an atom with that of another atom (usually both are nonmetals).

Exercises:
1) What is the trend for electronegativity in a row in the periodic table?
2) Since electrons are shared in a covalent bond, what do you expect about the electronegativity values of the atoms involved?
3) Is there a difference in electronegativity values of a metal (usually a member of Groups 1A, 2A or the transition metals) and a nonmetal (usually a member of Groups 4A to 8A)? How will this affect electron transfer in ionic bond formation?