Isotopes: Are atoms of the same element with the same number of protons and electrons but different number of neutrons. As the chemical properties of an element depend on the number of electrons in the outer electron shell. As isotopes of the same element have the same number of electrons, they have the same chemical properties.

Formation of ions: Ionic compounds contain a metal combined with one or more non-metals. They are not made up of molecules, they are made up of ions. Ions are formed from atoms by the gain or loss of electrons. Both metals and non-metals try to achieve a complete outer electron shell.

Ionic bonds: This form when 2 or more atoms bond to get a full outer shell. To do this they share electrons. Ionic bonds happen between metals and non-metals. These ions have a very strong attractions, as they are opposite charges, after sharing the electrons. They can share 1, 2 or 3 electrons. Ionic bonds from an ionic lattice, which is made by a plus, negative, plus…

Practice examples of dot and cross diagrams of ionic bonds.

Covalent bonds: They form when atoms of non-metals combine together, and become simple molecules. A covalent bond involves the sharing of electron pairs between atoms, to get a full outer shell. This electron pair are known as bonding pairs. Covalent bonds can be single, double or triple.

Practice examples of dot and cross diagrams of covalent bonds.