**6.2 Electron Transfer Diagrams**

Note: When a non-metal atom gains one or more electrons, the name of the negative ion ends in **–ide.** When a metal atom loses one or more electrons, the name of the positive ion stays the same.

**Sodium chloride**

When sodium and chlorine react together, the electron that a sodium atom loses to form a stable ion is gained by a chlorine atom to form a stable chlorine ion.

*Electron transfer diagram*

Electron transfer can also be illustrated by the following equation:

(Na – 1s22s22p63s1, Cl – 1s22s22p63s23p5)

**Magnesium oxide**

When magnesium burns in oxygen to form magnesium oxide a blinding white light is observed. It can be used in emergency flares and in special effects for film.

Solid magnesium oxide contains magnesium ions (Mg2+) and oxide ions (O2-) arranged in a lattice.

*Electron transfer diagram:*

*Equation :(Mg – 1s22s22p63s2 , O – 1s22s22p4)*

In solid magnesium oxide, each Mg2+ ion is strongly attracted to all of the neighbouring O2- ions and each O2- ion is strongly attracted to all neighbouring Mg2+ ions and exists as a three-dimension lattice. The cations and anions are electrostatically attracted to each other by ionic bonding.

MgO is hard and brittle, has a high melting temperature and conducts electricity only when molten.

**Magnesium chloride**

Magnesium chloride is often found dissolved in natural mineral waters.

* A magnesium atom (1s22s22p63s2) will have a stable outer shell if two electrons are removed and a magnesium ion is formed (Mg2+).
* A chlorine atom (1s22s22p63s23p5) will have a stable outer shell if one electron is gained to form a chloride ion (Cl-).

*Electron transfer diagram*

*Equation:*

**Text Questions: 6 - 8**

**Workbook: 15**