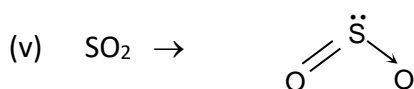
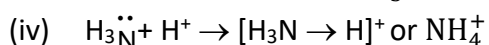
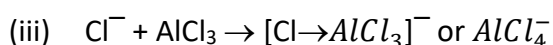
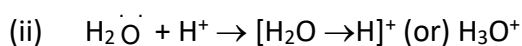
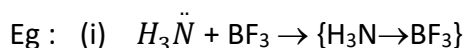


Co-ordinate covalent bond (dative bond):

It is proposed by sidgewick.

- Co-ordinate covalent bond is the bond formed by the sharing of electron pair but the shared pair is contributed by only one atom.
- Thus, in covalent bond both atoms will contribute & share, but in co-ordinate bond, one contributes & both will share
- To form co-ordinate covalent bond, there must be an electron pair donor & electron pair acceptor.
- Covalent bond is denoted by "____" where as co-ordinate bond is denoted by "→" directing from donor to acceptor.
- Co-ordinate bond is semi polar bond
- Formation of co-ordinate bond involves overlapping between completely filled orbital of donor with vacant orbital of acceptor \therefore co-ordinate bond is rigid & directional like covalent bond.



Properties of co - ordinate covalent compounds:

Their properties are almost similar to those of covalent compounds. Some of the properties are in between to those of Ionic & covalent compounds due to semi polar nature of the bond.

- 1) They are gases or liquids due to weak intermolecular forces.
- 2) Their melting & boiling points are low due to weak intermolecular forces.
- 3) They do not conduct electricity due to the absence of ions.
- 4) They are soluble in non-polar solvents & insoluble in polar solvents like water.
- 5) Co-ordinate compounds will exhibit Isomerism due to directional nature of bond.
- 6) The reactions in between co-ordinate compounds are very slow as they involve shuffling of bonds.