Standard Enthalpy Change for A Levels

1. **Standard Enthalpy Change of Reaction, $\Delta H_r^\ominus$**
   It is the energy change when molar quantities of reactants as stated in the thermochemical equation react together under standard conditions.

2. **Standard Enthalpy Change of Neutralisation, $\Delta H_n^\ominus$**
   It is the energy evolved when one mole of water is formed during neutralisation of an acid and alkali under standard conditions.

3. **Standard Enthalpy Change of Combustion, $\Delta H_c^\ominus$**
   It is the energy evolved when one mole of a compound is completely burnt in excess oxygen under standard conditions.

4. **Standard Enthalpy Change of Atomisation, $\Delta H_{atom}^\ominus$**

   Standard Enthalpy Change of Atomisation, $\Delta H_{atom}^\ominus$, of elements
   It is the energy absorbed when one mole of gaseous atoms is formed from its element under standard conditions.

   Standard Enthalpy Change of Atomisation, $\Delta H_{atom}^\ominus$, of compounds
   It is the energy absorbed when one mole of a compound is converted to its constituent gaseous atoms under standard conditions.

5. **Standard Bond Dissociation Enthalpy, $\Delta H_{disso}^\ominus$ or B.E.**
   It is the energy needed to break one mole of covalent bonds between two atoms in the gaseous state under standard conditions.

6. **First Ionisation Energy, I.E.**
   It is the energy absorbed when one mole of electron is removed from one mole of gaseous atoms to form one mole of singly-charged gaseous cations.

7. **First Electron Affinity, E.A.**
   It is the energy changed when one mole of electron is added to one mole of gaseous atoms to form one mole of singly-charged gaseous anion.

8. **Standard Lattice Energy, $\Delta H_{latt}^\ominus$ or L.E.**
   It is the energy evolved when one mole of an ionic compound is formed from its constituent gaseous ions under standard condition.

9. **Standard Enthalpy Change of Hydration, $\Delta H_{hyd}^\ominus$ or H.E.**
   It is the energy evolved when one mole of gaseous ions is surrounded by water molecules, forming a solution at infinite dilution under standard conditions.

10. **Standard Enthalpy Change of Solution, $\Delta H_{sol}^\ominus$**
    It is the energy change when one mole of substance is dissolved by solvent (usually water) such that further dilution produces no more energy change under standard conditions.

11. **Standard Enthalpy Change of Formation, $\Delta H_f^\ominus$**
    It is the energy change when one mole of a compound is formed from its constituent elements in their standard states under standard conditions.