⊛ Casting defects:-

Some common casting defects and their causes are as follows:

① **Mould Shift:-** It results in a mismatching of the top and bottom parts of a casting, usually at the parting line.

⊛ **Causes:-**

(i) Misalignment of pattern parts, due to worn or damaged patterns.

(ii) Misalignment of mould box or flask equipment.

② **Core Shift:-** It is an abnormal variation of the dimensions which are dependent on core position.

⊛ Cause:- (i) Undersized or oversides core prints.

By using incorrect size a chaplet.

③ **Swell:-** It is an enlargement of mould cavity by molten metal pressure resulting in localised or general enlargement of the casting.

* Causes:- (i) Due to insufficient ramming of sand
(ii) due to pouring of molten metal too rapidly.

(4) Sand Wash
(5) Hot tear
(6) Sand Blow or Blow Hole
(7) Cold Shuts and Misruns

* Residual Stresses :-

(1) Different sections of a non-uniform cross-section casting solidify at different rates depending on their cross-sectional areas.
(2) This results in varying amount of contraction in different parts, producing high internal stresses, which may cause tearing or cracking of casting.
(3) High residual (internal) stresses can be avoided by placing chills over large cross-sectional areas so that whole of casting cools at uniform rate.
(4) If high residual stresses exist in a casting it has to be relieved by a suitable heat treatment process or by other methods of stresses relieving.

(x) Hot and cold working :-

(x) Hot working :- ① It is defined as the process which is done above recrystallization temperature but below the melting point of the metal.

② Poor surface finishing due to oxidation.

③ Density of metal is increased due to new grain formation.

(x) Cold Working :- ① It is defined as the process which is done below recrystallization temperature.

② No hardening due to low temperature.

③ Better surface finish

④ No such effect in the density of metal.