

Concepts/ formulas-

$C_1 \Rightarrow$ Circle (radius = r_1 , centre O_1)

$C_2 \Rightarrow$ Circle (radius = r_2 , centre O_2)

- 1) $O_1O_2 = r_1 + r_2 \Leftrightarrow$ Touch externally
- 2) $O_1O_2 = |r_1 - r_2| \Leftrightarrow$ Touch Internally
- 3) $O_1O_2 > r_1 + r_2 \Leftrightarrow$ Separate & do not touch
- 4) $O_1O_2 < |r_1 - r_2| \Leftrightarrow$ One inside another
- 5) $|r_1 - r_2| < O_1O_2 < r_1 + r_2 \Leftrightarrow$ Intersecting circles.

