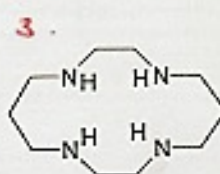
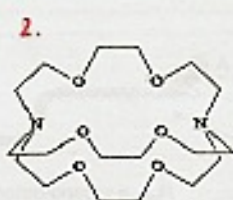
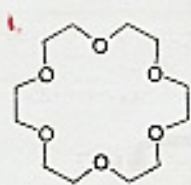


Template [1+1] SYNTHESIS

Organisation of linear chain by M^{n+} ion brings remote ends into proximity before linking to form macrocycle.

Can have [2+2] Template Synthesis with 2 of each ligand to form a larger macrocycle.

Common MACROCYCLIC LIGAND TYPES



1. Crown Ether O-donor

2. Macrobicyclic (Cryptand) O-donor

3. (Aza-Crown) Polyamine (Cryptand) N-donor

Nitrogen more softer than oxygen. Hard to bind transition metals rather than hard metals (Na^+ , K^+), then aza-crowns are better.

CROWN ETHERS

Macrocycles consisting of 9- to 30-membered rings with 3 to 10 (mainly) O-donors.

Nomenclature: IUPAC: 1,4,7,10,13,16-hexaoxacyclooctadecane.

Common name: 18-Crown 6.

1st no. $\rightarrow$ describes number of atoms in the ring.

2nd no. $\rightarrow$ describes number of oxygen donors.

Synthesis: Ligand synthesis resulting in Crown Ether formation

