

Bonding:

Covalent  
→ sharing of electrons



→ FOA, less  
bpt, mpt ↓

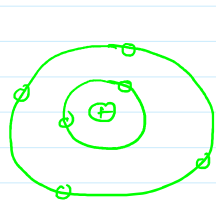
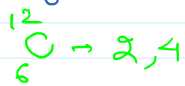
Ionic

→ transfer of electrons  
→ metal & non metal  
→ high force of attraction  
→ bpt, mpt high.

Why bond formation takes place?

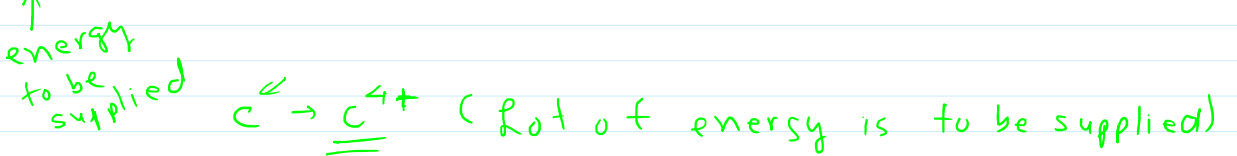
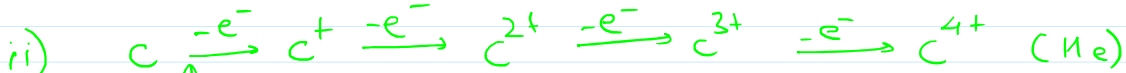
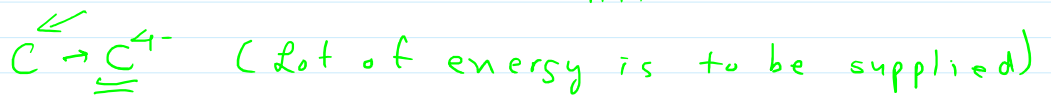
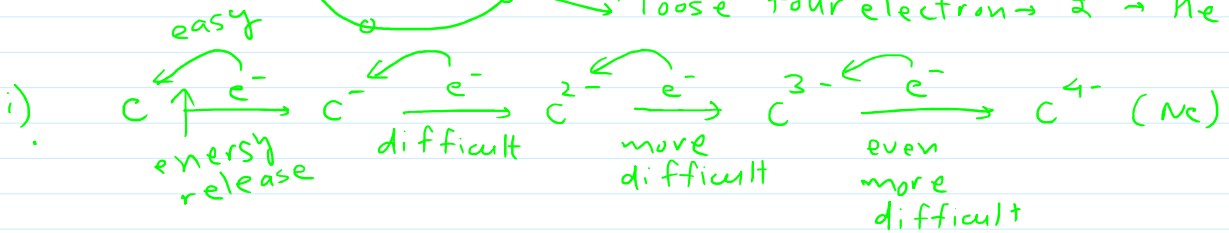
Bonding in carbon - The covalent bond

Carbon has four electrons in its outermost shell and needs to gain or lose four electrons to attain noble gas configuration.



i) gain four electrons → 2, 8 → Ne

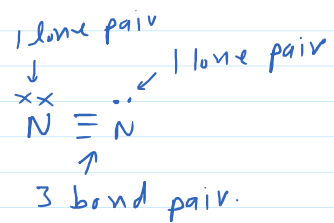
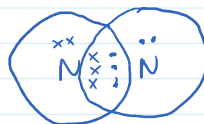
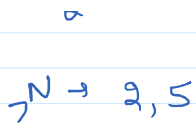
ii) lose four electrons → 2 → He



i) It could gain four electrons forming  $C^{4-}$  anion. But it would be difficult for the nucleus with six protons to hold on to ten electrons, that is four extra electrons.

ii) It could lose four electrons forming  $C^{4+}$  cation. But it would require a large amount of energy to remove four electrons leaving behind a carbon cation with six protons in its





H.W

i)  $\text{NH}_3$ ,  $\text{CH}_4$ ,  $\text{CO}_2$ ,  $\text{Sg}$