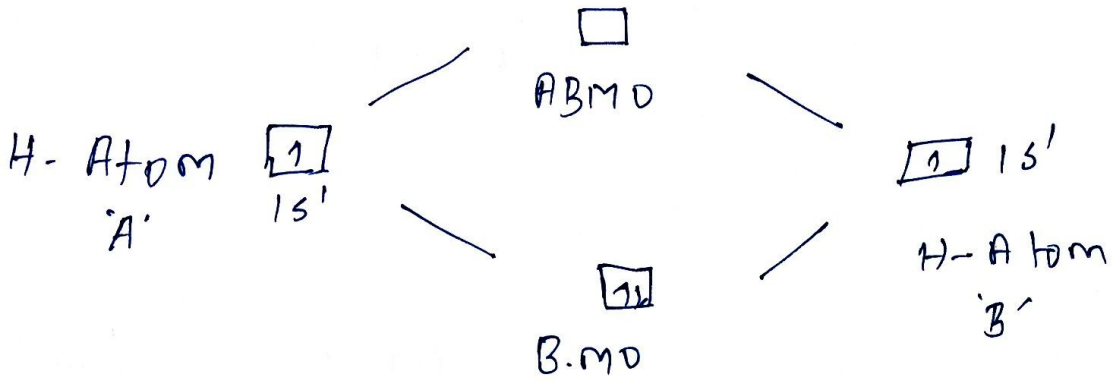
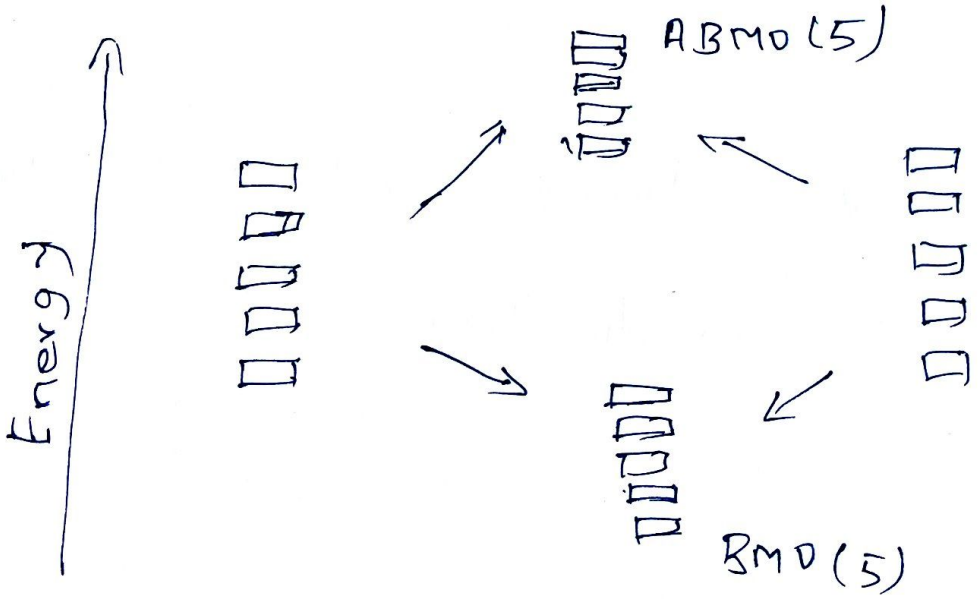


If 10 atoms of 'H'

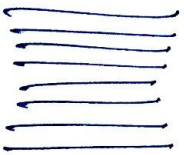


Hence N atomic orbitals ⟶ $N/2$ BMO

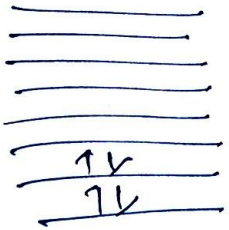
$N/2$ ABMO

For instance, 100 AO - H atom

100 AO



50 ABMO



50 BMO } Band

Number of electrons

1s' $100 \times 1 = 100\ e^-$

Filled valency Band ($50 \times 2 = 100\ e^-$)

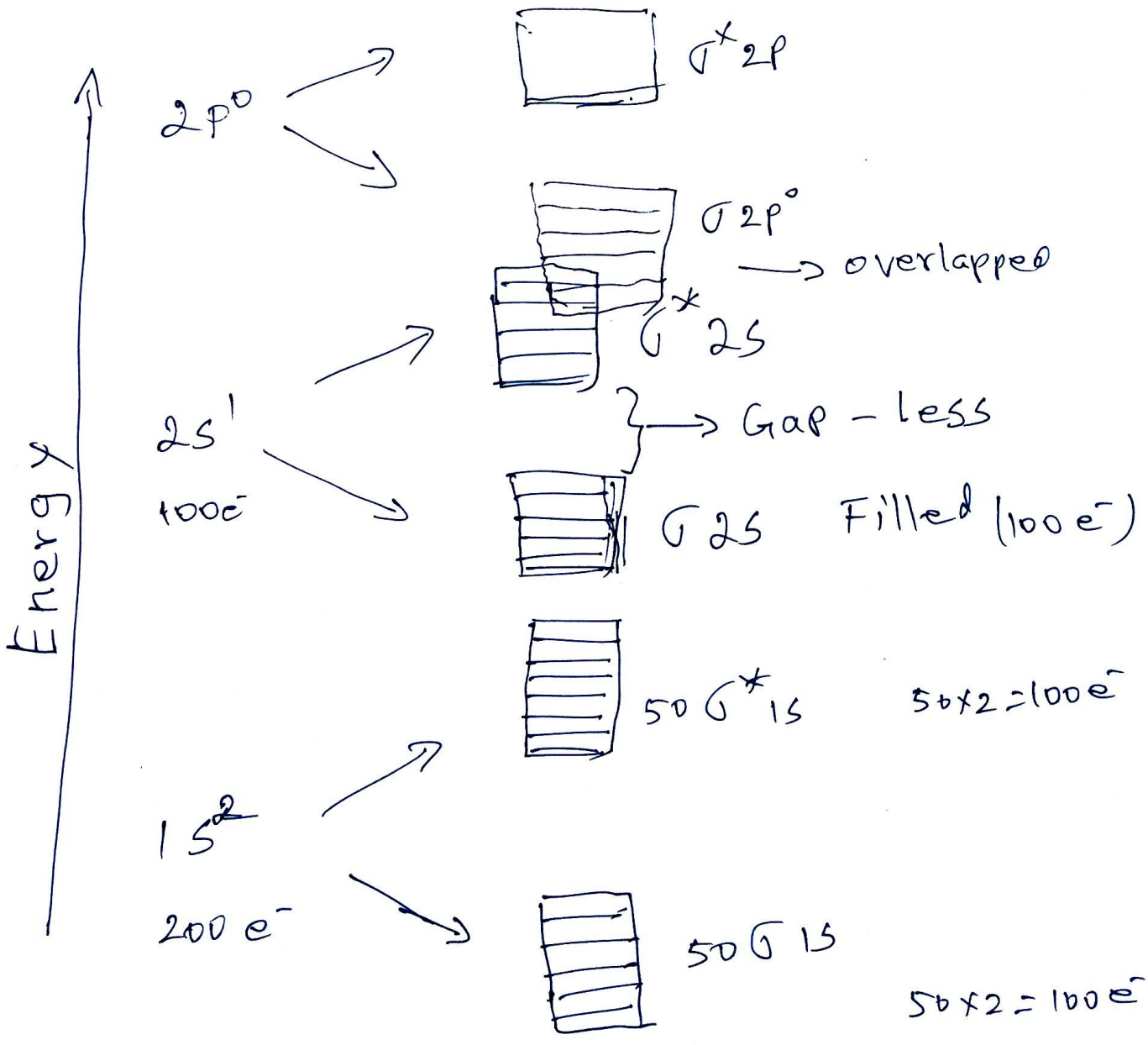
Empty conduction Band

I- Group - Alkali

Li - $1s^2\ 2s^1\ 2p^0$

Na - $1s^2\ 2s^2\ 2p^6\ 3s^1\ 3p^0$

Li - 100 Atoms



Be and Mg

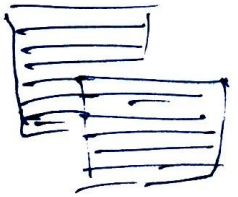
Be – $1s^2$ $2s^2$ $2p^0$ ✓

Mg – $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^0$

100 Atoms

$2p^0$

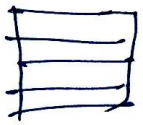
$\sigma^* 2p$



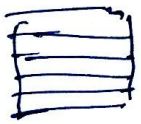
$\sigma 2p$ → overlapped

$\sigma^* 2s$ 100 e^- Filled

$2s^2$



$\sigma 2s$ 100 e^-



$50\sigma^* 1s$ 100 e^-

$1s^2$

200 e^-

$50\sigma 1s$ 100 e^-