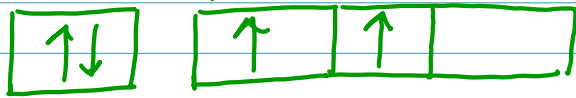
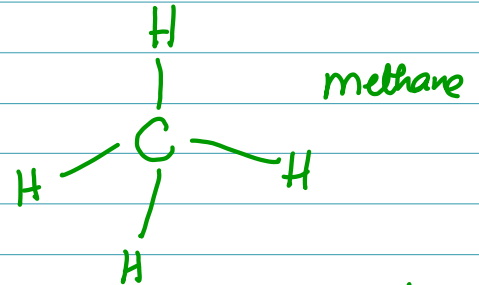
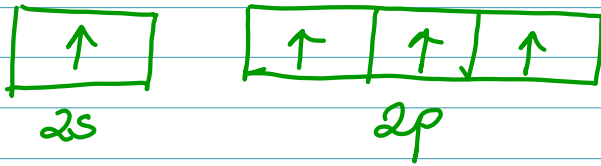
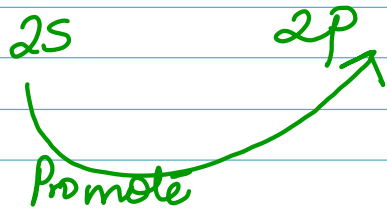


$sp^3, sp^2, sp$

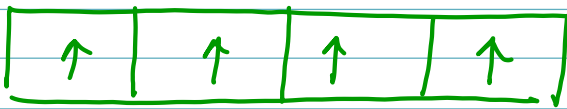
${}^6C \quad 2s^2 \quad 2p^2$



atomic orbitals

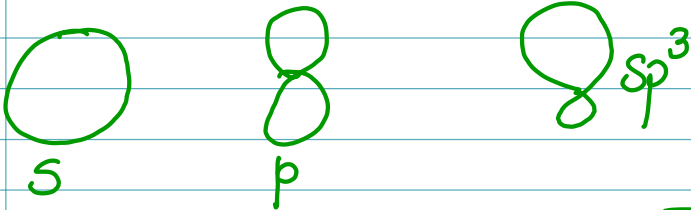


Mix

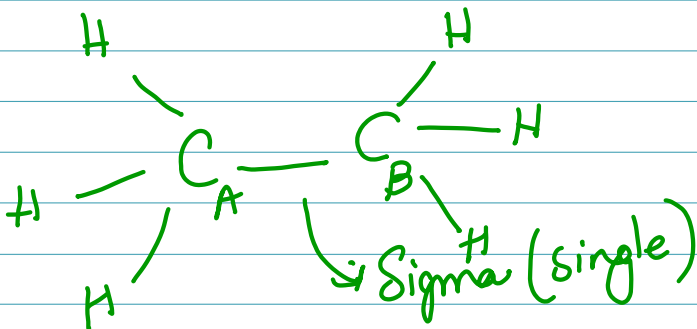
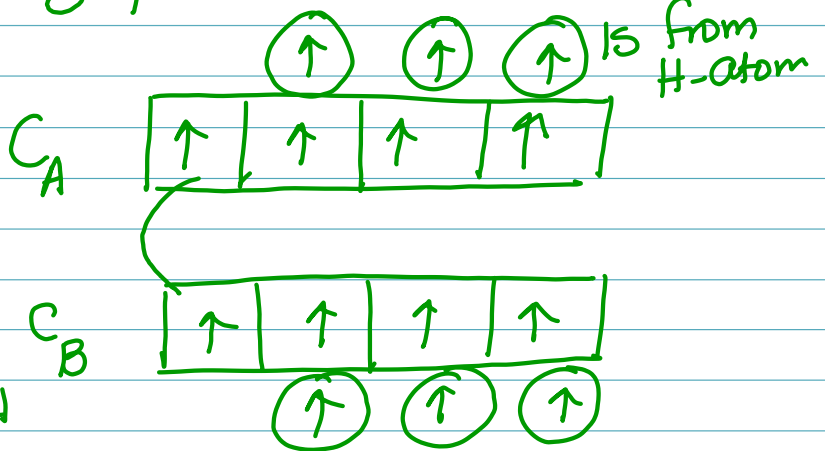


C-H are of equal length

**four**  $sp^3$  hybrid orbitals



$C_2H_6$  ethane



$C_A - C_B: C_{sp^3} - C_{sp^3}$   
 $C - H: C_{sp^3} - H_{1s}$