

The two values represent the fact that the two electrons in an orbital have equal but opposite spin.

⇒ (i) PAULI'S EXCLUSION PRINCIPLE → No two electrons with in the same atom can have the same set of all four Quantum number.

(ii) AUFBAU PRINCIPLE → Electrons are filled in the subshell in

increasing order of the energies.

→ The order of energy is determined using the  $(n+l)$  rule.

$(n+l)$  RULE → (i) subshell having smaller value of  $(n+l)$  is lower in energy

(ii) if the value of  $(n+l)$  is same the subshell having smaller value of  $n$  will be lower in energy.

|         |     |     |     |     |     |     |     |     |     |     |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|         | 1s  | 2s  | 2p  | 3s  | 3p  | 3d  | 4s  | 4p  | 4d  | 4f  |
| $(n+l)$ | 1+0 | 2+0 | 2+1 | 3+0 | 3+1 | 3+2 | 4+0 | 4+1 | 4+2 | 4+3 |
|         | = 1 | = 2 | = 3 | = 3 | = 4 | = 5 | = 4 | = 5 | = 6 | = 7 |

Q. Sc - Zn

