

SUBJECT - CHEMISTRY

CLASS - BSc (SUB/JEN) PART - I

GROUP - B

TOPIC - HUND'S RULE

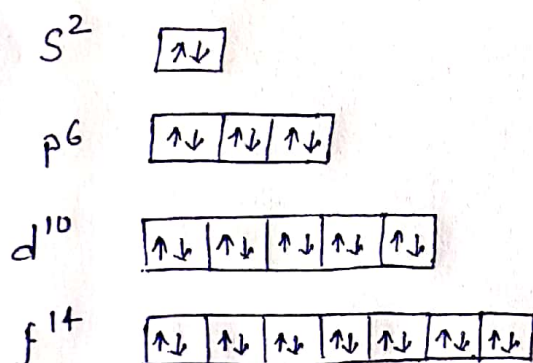
Dr Hari Mohan Prasad Singh

Department of Chemistry

Dr. L. K. V. D. College Tarpur Samastipur

Page No. 01  
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Hund's Rule: We know that s, p, d and f are sub-shells s, p, d and f sub-shells can accommodate the maximum of 2, 6, 10 and 14 electrons respectively. An orbital can have the maximum of two electrons provided both of them have opposite spins. On this basis s, p, d and f subshells can have 1, 3, 5 and 7 orbitals. When a subshell has the maximum number of electrons, then it has one and only one electronic arrangement. orbital and electron are shown by box and arrow  $\uparrow$  or  $\downarrow$ .



And when the subshell has one and only one electronic arrangement, then it is the most stable arrangement because any other arrangement is not at all possible. Therefore completely filled subshells are most stable.

When a subshell has lesser number of electrons than its maximum accommodation capacity, then the subshell can have more than one i.e. many electronic arrangements or, it may be filled in a number of ways e.g. Carbon atom is a  $p^2$  system  $[1s^2 2s^2 2p^2]$  i.e. two electrons are present in three p-orbitals which have the maximum capacity to accommodate six electrons.