

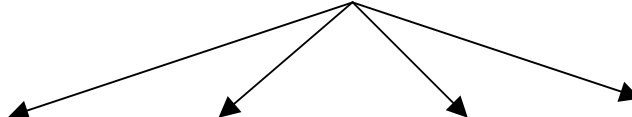
ELECTRON ORBITAL WORKSHEET

PRINCIPAL ENERGY LEVEL (N)

N=1,2,3,4 etc.



SUBLEVELS



NAME



ORBITALS

EACH ORBITAL CAN HOLD _____ ELECTRONS



OF ELECTRONS
ALTOGETHER

PRINCIPAL
ENERGY LEVEL

SUBLEVELS

TOTAL # OF = $2N^2$
ELECTRONS

1		
2		
3		
4		

1s
2s 2p
3s 3p 3d
4s 4p 4d 4f
5s 5p 5d 5f

ARRANGE THE ELECTRONS FROM 1s TO 5s IN ORDER OF THEIR
INCREASING ENERGY. SHOW THE MAXIMUM NUMBER OF
ELECTRONS WHICH CAN BE HELD IN EACH SUBLEVEL.

1s² _____

QUESTIONS :

- 1) WHICH PRINCIPAL ENERGY LEVEL CAN HOLD A MAXIMUM OF 18 ELECTRONS ?
- 2) IF N REPRESENTS THE PRINCIPAL ENERGY LEVEL, THE MAXIMUM NUMBER OF ELECTRONS POSSIBLE IN THAT PRINCIPAL ENERGY LEVEL IS EQUAL TO :
A) N B) $2N$ C) N^2 D) $2N^2$
- 3) WHAT IS THE MAXIMUM NUMBER OF SUBLEVELS IN THE THIRD PRINCIPAL ENERGY LEVEL ?
- 4) THE TOTAL NUMBER OF **d** ORBITALS IN THE THIRD PRINCIPAL ENERGY LEVEL IS :
- 5) WHICH ATOM IN THE GROUND STATE CONTAINS ONLY ONE ORBITAL THAT IS PARTIALLY OCCUPIED ?
A) Si B) Ne C) Ca D) Na
- 6) THE TOTAL NUMBER OF COMPLETELY FILLED ORBITALS IN AN ATOM OF NITROGEN IN THE GROUND STATE IS :
A) 1 B) 2 C) 3 D) 4
- 7) THE TOTAL NUMBER OF ORBITALS IN AN **f** SUBLEVEL IS :
A) 1 B) 3 C) 5 D) 7
- 8) WHAT IS THE ELECTRON CONFIGURATION FOR ${}^4\text{Be}^{2+}$?
A) $1s^1$ B) $1s^2$ C) $1s^2 2s^1$ D) $1s^2 2s^2$