ELECTRON CONFIGURATION 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 ELECTRONS	=	$2N^2$
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.

$1s^2$ _____ _____ _____ _____ _____ _____ _____ _____ _____

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 $_{4}\mathbf{Be}^{2+}$?

A) $1S^1$ B) $1S^2$ C) $1S^2\ 2S^1$ D) $1S^2\ 2S^2$