

# ELECTRON CONFIGURATION WORKSHEET

PRINCIPAL ENERGY LEVEL (N)  
N=1,2,3,4 etc.

↓

SUBLEVELS

NAME

\_\_\_\_\_

↓

# ORBITALS

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

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<sup>2</sup>    \_\_\_\_\_

## 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  ${}^{2+}_{4}\text{Be}$  ?  
A)  $1s^1$                       B)  $1s^2$                       C)  $1s^2 2s^1$                       D)  $1s^2 2s^2$