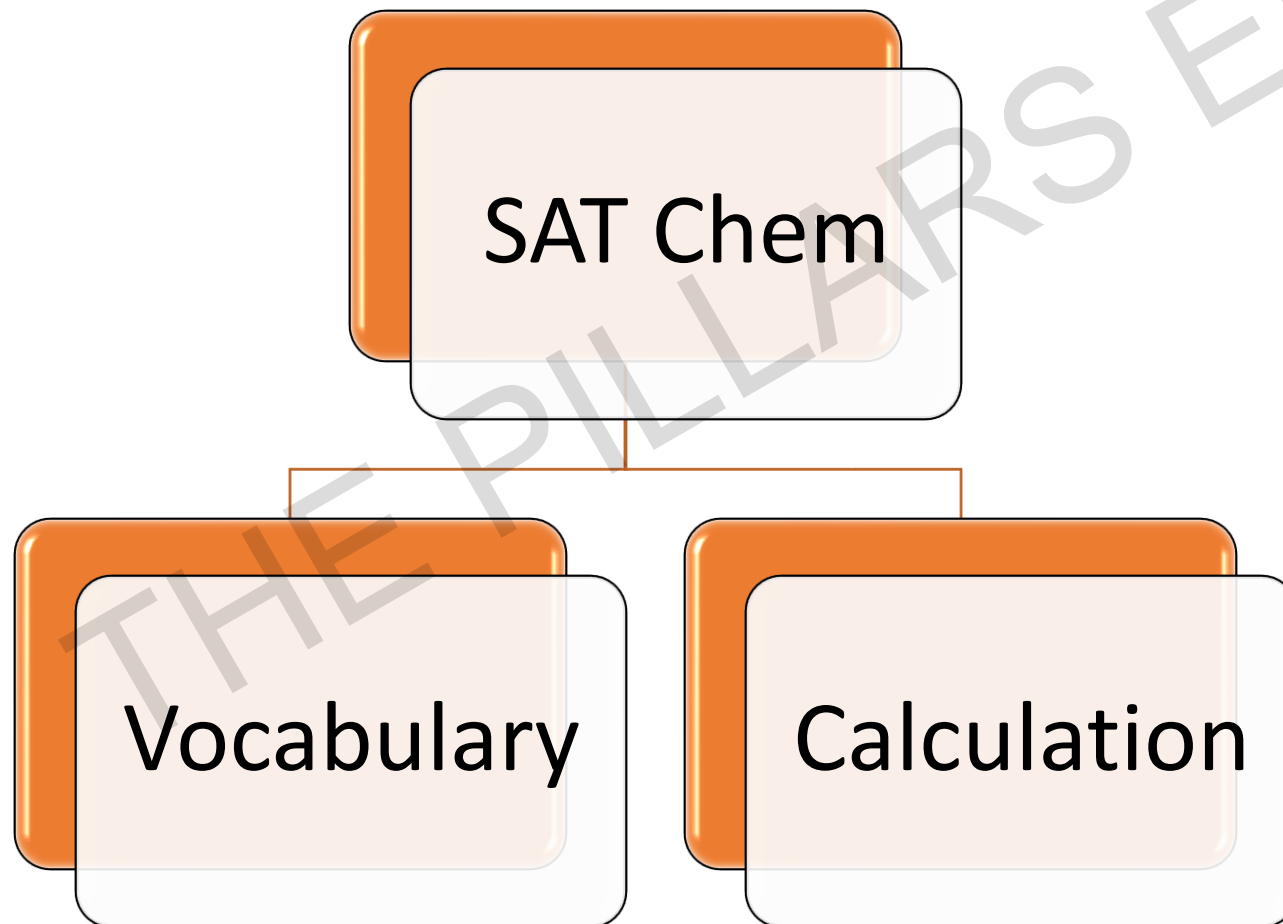


# SAT CHEMISTRY

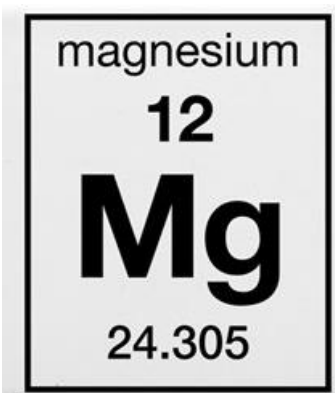
## Technique

# SAT Chemistry Technique



# Vocabulary

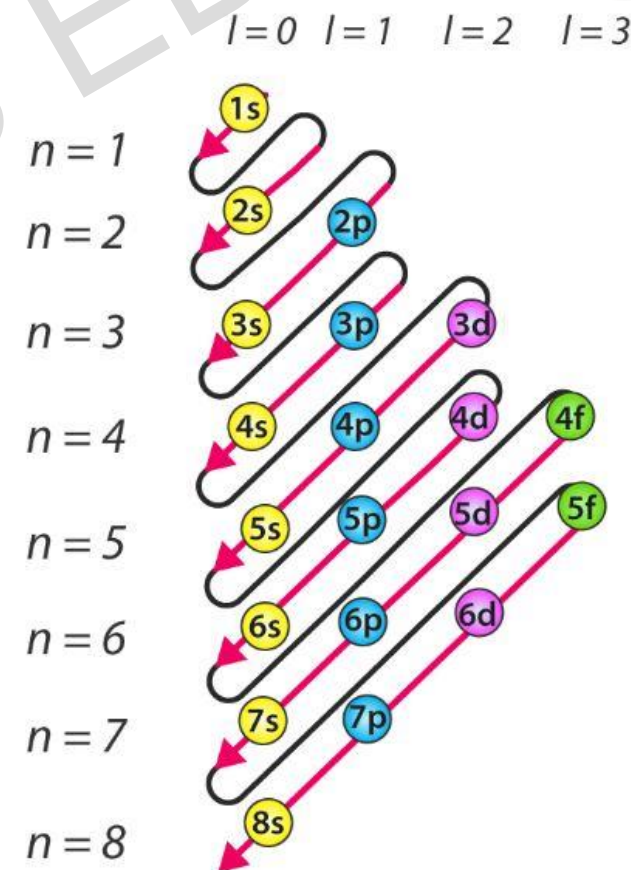
- Electrons configuration (electronic structure)



2,8,2

Ground state  $1s^2 2s^2 2p^6 3s^2$

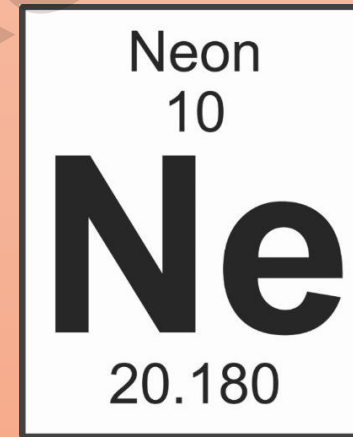
Excited state  $1s^2 2s^2 2p^6 3s^1 3p^1$



# Example 1

What ground state electrons configuration of neon atom?

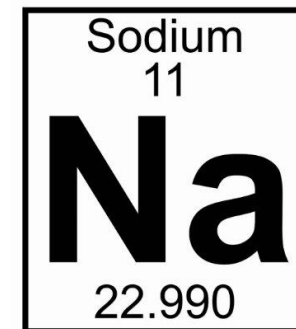
- A.  $1s^2 2s^2 2p^6 3s^2$
- B.  $1s^2 2s^2 2p^6 3s^1 3p^1$
- C.  $1s^2 2s^2 2p^6$
- D.  $1s^2 2s^2 2p^6 3s^2 3p^3$
- E.  $1s^2 2s^2 2p^6 3s^2 3p^6$



## Example 2

What ground state electrons configuration of sodium ion?

- A.  $1s^2 2s^2 2p^6 3s^2$
- B.  $1s^2 2s^2 2p^6 3s^1 3p^1$
- C.  $1s^2 2s^2 2p^6$
- D.  $1s^2 2s^2 2p^6 3s^1$
- E.  $1s^2 2s^2 2p^6 3s^2 3p^6$



# Example 1&2

## Example 1

What ground state electrons configuration of neon atom?

- A.  $1s^2 2s^2 2p^5 3s^1$
- B.  $1s^2 2s^2 2p^6 3s^1 3p^1$
- C.  $1s^2 2s^2 2p^6$
- D.  $1s^2 2s^2 2p^6 3s^1$
- E.  $1s^2 2s^2 2p^6 3s^2 3p^6$

## Example 2

What ground state electrons configuration of sodium ion?

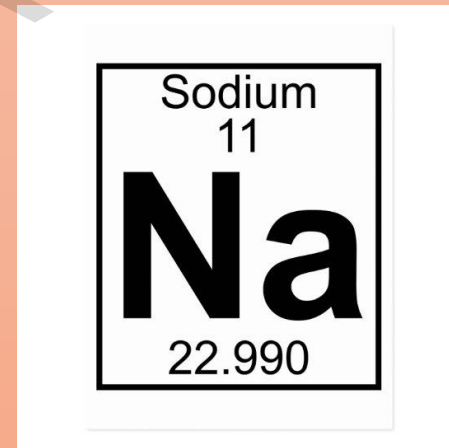
- A.  $1s^2 2s^2 2p^5 3s^1$
- B.  $1s^2 2s^2 2p^6 3s^1 3p^1$
- C.  $1s^2 2s^2 2p^6$
- D.  $1s^2 2s^2 2p^6 3s^1$
- E.  $1s^2 2s^2 2p^6 3s^2 3p^6$

Sodium 11
<b>Na</b>
22.990

## Example 3

What excited state electrons configuration of Sodium ion?

- A.  $1s^2 2s^2 2p^5 3s^1$
- B.  $1s^2 2s^2 2p^6 3s^1 3p^1$
- C.  $1s^2 2s^2 2p^6$
- D.  $1s^2 2s^2 2p^6 3s^2 3p^3$
- E.  $1s^2 2s^2 2p^6 3s^2 3p^6$



## Calculation

- Significant figure and Decimal

Number	Significant figure	Decimal
0.236		
2.01		
3.20		
20.00		



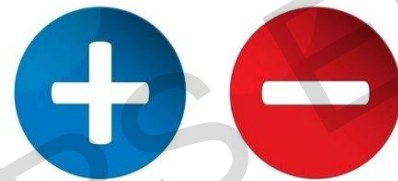
## Calculation



### Lowest Significant Figure

$$2.22 \times 0.4 = 0.888$$

$$2.22 \times 0.4 \approx 0.9$$



### Lowest Decimal

$$2.22 + 0.4 = 2.62$$

$$2.22 + 0.4 \approx 2.6$$

## Example 3

The following data were collected to determine the density of a liquid.

Mass of bottle filled with liquid	21.245 g
Mass of empty bottle	10.234 g
Volume of liquid in bottle	11.0 mL

The density of the liquid is best recorded as

- A. 0.1 g/mL
- B. 1 g/mL
- C. 1.0 g/mL
- D. 1.00 g/mL
- E. 1.001 g/mL

## Example 4

The following data were collected to determine the density of insoluble compound X. liquid.

Mass of beaker and compound X	24.285 g
Mass of empty beaker	16.492 g
The volume of compound X	1.47 mL

The density of the compound X is best recorded as

- A. 2.176 g/mL
- B. 3.745 g/mL
- C. 5.34 g/mL
- D. 5.340 g/mL
- E. 0.12 g/mL