

CHEMISTRY

THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

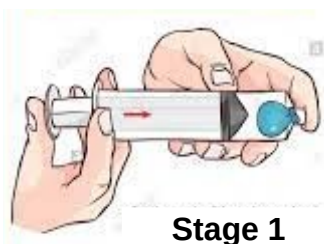
WORKSHEET - 2

Standard – X

WS2CH10 2(E)



1. Two stages of an experiment conducted with an inflated balloon in the syringe is given below. Analyse it and answer the following.



Stage 1



Stage 2

- What happens to the size of the balloon when the piston is pulled out?
- What do you infer regarding the relation between pressure and volume of the gas in the balloon?
- State the gas law related to this experiment.
- Write any one instance from daily life related to this law.

2.



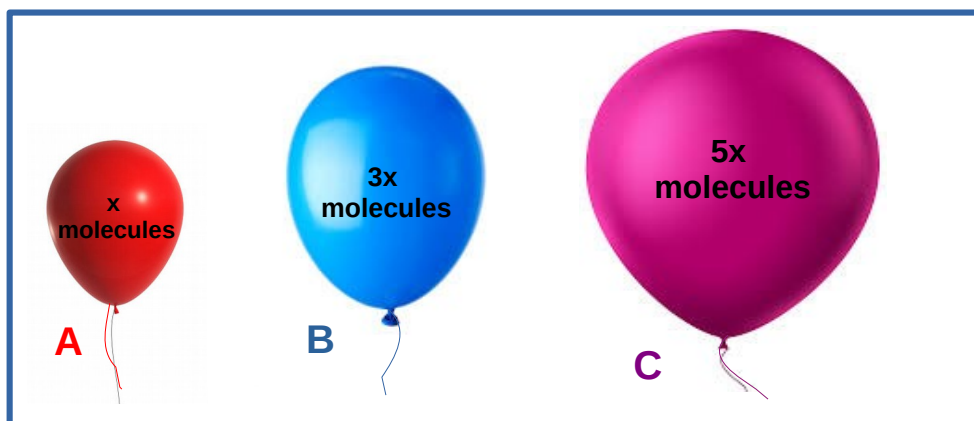
During summer tyres of motor vehicles are not fully inflated.

- Explain the reason behind the above statement based on a suitable gas law.
- State the law based on the above situation and write its mathematical expression.
- Complete the table given below.

| Volume (litres) | Tempertaure (K) | $\frac{\text{Volume}}{\text{Temperature}}$ (V/T) |
|-----------------|-----------------|--------------------------------------------------|
| 1000 | 500 |i..... |
| 800 |ii..... | 2 |
|iii..... | 450 | 2 |

CHEMISTRY

3. Gases are filled in the given balloons A, B, C under the same conditions of temperature and Pressure.



- What is the relation between the volume of the balloon and the number of molecules present in them.
- Name and state the gas law which explains the above relation.
- If the volume of balloon B is 6 litres calculate the volume of the balloons A and C.

4. Find out the incorrect statement from the following and correct them.

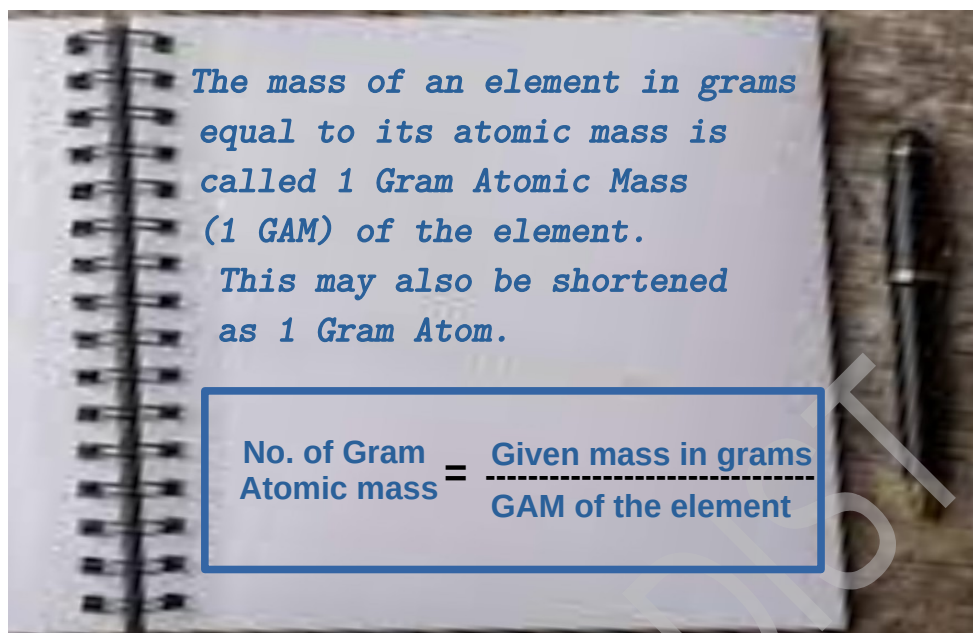
- Freedom of gas molecules is very less.
- The distance between the gas molecules is very large.
- The energy of gas molecules is very less.
- The attractive force between gas molecules is very high.
- Volume of the gas is the volume of the container which it occupies.

5. Identify the gas law related to the following situations.

- As the balloon is filled with air, its volume increases
- After attaching a balloon to the mouth of a bottle, it is lowered into hot water, then the balloon seems to be inflated.
- The size of the weather forecasting balloon increases as it goes up.
- An inflated balloon kept in sunlight bursts after some time.

CHEMISTRY

6. Raju's recordings in the science diary is given below. Help him to complete the table given below.



| Element | Atomic mass | Gram Atomic Mass | Mass in grams | Number of GAM |
|---------|-------------|------------------|---------------|---------------|
| Oxygen | 16 | 16 g | 80 g |A..... |
| Sodium | 23 |B..... | 46 g | 2 |
| Carbon | 12 | 12 g |C..... | 1 |

7.

One gram atomic mass of any element contains 6.022×10^{23} atoms. This number is known as Avagadro number. This is indicated as N_A .

Read the above statements and arrange the given samples in the increasing order of their number of atoms.

(Atomic mass N - 14, He - 4, Cl - 35.5, Ca - 40)

A B C D

70 g of Nitrogen 40 g of Calcium 40 g of Helium 70 g of Chlorine

CHEMISTRY

8. Solve the crossword

1. The average kinetic energy of molecules in a substance.
2. The scientist who proved the relationship between volume and temperature of a gas.
3. The space occupied by a substance.
4. The scientist who discovered the relation between volume and number of molecules of a gas.
5. Force exerted per unit area.
6. The scientist who established the relationship between volume and pressure of a gas.

