

CHEMISTRY

THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

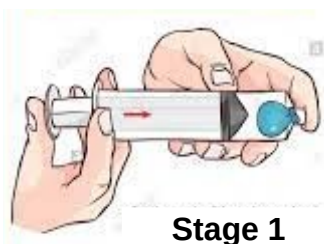
WORKSHEET - 2

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.



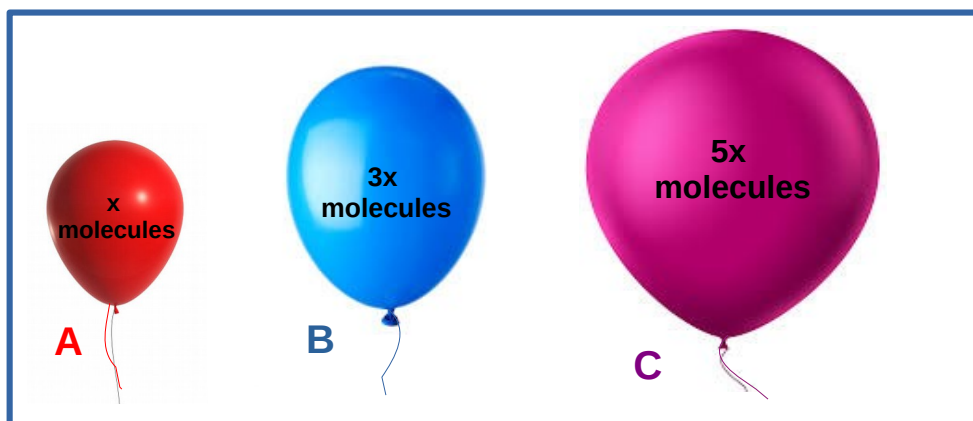
During summer tyres of motor vehicles are not fully inflated.

- 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	500i.....
800ii.....	2
.....iii.....	450	2

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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.

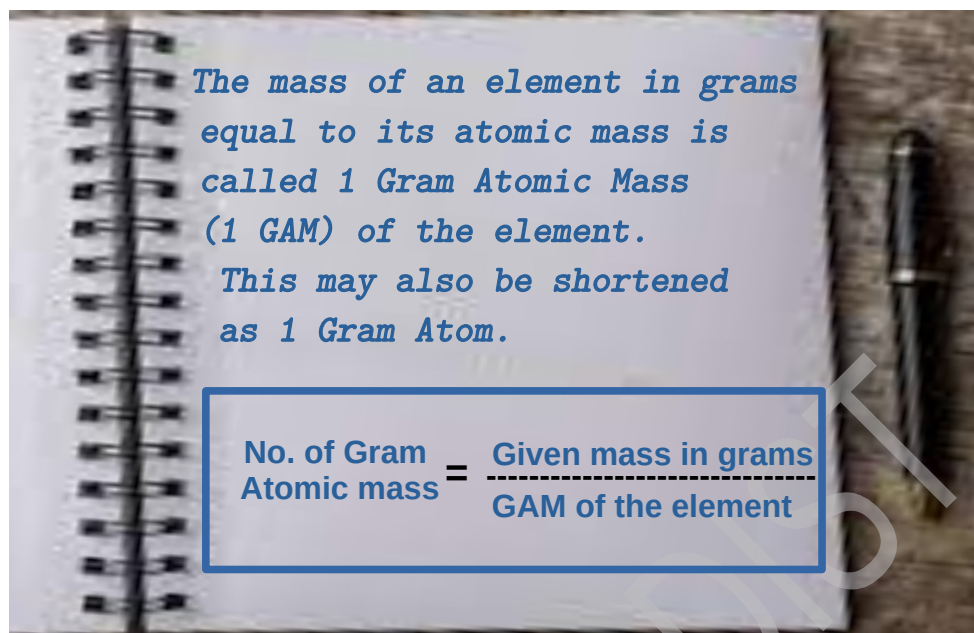
- Freedom of gas molecules is very less.
- The distance between the gas molecules is very large.
- The energy of gas molecules is very less.
- The attractive force between gas molecules is very high.
- Volume of the gas is the volume of the container which it occupies.

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.

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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 gA.....
Sodium	23B.....	46 g	2
Carbon	12	12 gC.....	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

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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.

