



St. Lawrence High School
A Jesuit Christian Minority Institution
Term – 1st
Work Sheet – 3



Class – X
Subject – Physical Science

Date – 01.03.21
Chapter – Thermal Phenomena

Choose the correct option for the following questions.

1 × 15 = 15

- The type of expansion a gas can have is –
 - Superficial and volume expansion
 - linear and volume expansion
 - only volume expansion
 - none
- For thermal expansion of gas, we generally ignore the expansion of gas container, because –
 - γ of container is much greater than that of the gas contained
 - γ of gas contained is much greater than that of the container
 - γ of gas contained is equal to that of the container
 - Gas molecules do not exert any force on each other.
- For all ideal gasses at constant pressure –
 - γ is different for different gas
 - γ depends on the nature of gas container
 - γ is same for all the gas
 - γ is a fraction greater than one?.
- For all ideal gasses at constant pressure -
 - $\gamma = 273$
 - $\gamma = 0$
 - $\gamma = -273$
 - $\gamma = \frac{1}{273}$
- The SI unit of coefficient of volume expansion of gas is -
 - $^{\circ}\text{C}$
 - $/\text{K}$
 - $^{\circ}\text{C}$
 - K
- The C.G.S unit of coefficient of volume expansion of gas is -
 - $^{\circ}\text{C}$
 - $/\text{K}$
 - $^{\circ}\text{C}$
 - K
- The volume expansion coefficient of gas –
 - Is $\frac{1}{273}$ for ideal gas at constant pressure.
 - could be more or less than $\frac{1}{273}$ if pressure is varied
 - may not be $\frac{1}{273}$ at constant pressure if the gas is not an ideal one.
 - All of the above.

8. Change of volume of gas depends on –
- Initial volume
 - Change of temperature
 - Pressure on the gas
 - All of the above
9. The volume expansion coefficient of ideal gas at constant pressure, depends on –
- Nature of gas
 - Change of temperature
 - Initial volume
 - None of the above
10. Two different ideal gasses of volume v and $2v$ are mixed at constant pressure. Volume expansion coefficient of the mixture –
- Will remain same to $\frac{1}{273}$
 - Will be $\frac{1}{91}$
 - Depends on the nature of the gasses
 - None of these
11. The relation $\alpha: \beta: \gamma = 1: 2: 3$, is valid in case of –
- only Solid
 - only Liquid
 - only Gas
 - solid, liquid and gas all.
12. 1cc ideal gas is heated (keeping pressure constant), such that the temperature increases from 0°C to 1°C . The increase in volume will be –
- 1cc
 - 273 cc
 - $\frac{1}{273}$ cc
 - None of these
13. γ of any ideal gas at constant pressure is same, because –
- Ideally the gas molecules do not exert any force on each other
 - Gas molecules are mass less
 - Kinetic energy of gas molecules increase when temperature is increased
 - All of these

14. At constant pressure, certain amount of ideal gas is heated from 0°C . At what temperature the increase in volume will be equal to the initial volume?
- 273 K
 - 0 K
 - $\frac{1}{273}^{\circ}\text{C}$
 - 273°C
15. 32g of O_2 gas is taken at STP and then heated to 273°C (keeping pressure constant). What will be the volume of the gas at that temperature?
- 22.4 lit
 - $\frac{22.4}{273}$ lit
 - 44.8 lit
 - None of these

Name of the teacher – SoumitraMaity