



St. Lawrence High School
A Jesuit Christian Minority Institution
Solution of Work Sheet – 3



Class – X
Subject – Physical Science

Date – 01.03.21
Chapter – Thermal Phenomena

Choose the correct option for the following questions.

$1 \times 15 = 15$

1. The type of expansion a gas can have is –
- a. Superficial and volume expansion
 - b. linear and volume expansion
 - c. only volume expansion
 - d. none

Ans: c. only volume expansion

2. For thermal expansion of gas, we generally ignore the expansion of gas container, because –
- a. γ of container is much greater than that of the gas contained
 - b. γ of gas contained is much greater than that of the container
 - c. γ of gas contained is equal to that of the container
 - d. Gas molecules do not exert any force on each other.

Ans: b. γ of gas contained is much greater than that of the container

3. For all ideal gasses at constant pressure –
- 1. γ is different for different gas
 - 2. γ depends on the nature of gas container
 - 3. γ is same for all the gas
 - 4. γ is a fraction greater than one?.

Ans: c. γ is same for all the gas

4. For all ideal gasses at constant pressure -
- a. $\gamma = 273$
 - b. $\gamma = 0$
 - c. $\gamma = -273$
 - d. $\gamma = \frac{1}{273}$

Ans: d. $\gamma = \frac{1}{273}$

5. The SI unit of coefficient of volume expansion of gas is -
- a. $^{\circ}\text{C}$
 - b. $/\text{K}$
 - c. $^{\circ}\text{C}$
 - d. K

Ans: b. $/\text{K}$

6. The C.G.S unit of coefficient of volume expansion of gas is -
- a. $^{\circ}\text{C}$
 - b. $/\text{K}$
 - c. $^{\circ}\text{C}$
 - d. K

Ans: a. $^{\circ}\text{C}$

7. The volume expansion coefficient of gas –
- a. Is $\frac{1}{273}$ for ideal gas at constant pressure.
 - b. could be more or less than $\frac{1}{273}$ if pressure is varied
 - c. may not be $\frac{1}{273}$ at constant pressure if the gas is not an ideal one.
 - d. All of the above.

Ans: d. 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

Ans: d. 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

Ans: d. 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

Ans: Will remain same to $\frac{1}{273}$

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.

Ans: a. only Solid

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

Ans: c. $\frac{1}{273}$ cc

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

Ans: a. Ideally the gas molecules do not exert any force on each other

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?
- a. 273 K
 - b. 0 K
 - c. $\frac{1}{273}^{\circ}\text{C}$
 - d. 273°C

Ans: d. 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?
- a. 22.4 lit
 - b. $\frac{22.4}{273}$ lit
 - c. 44.8 lit
 - d. None of these

Ans: c. 44.8 lit

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