

## 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
  - c. only volume expansion

Ans: c. only volume expansion

- b. linear and volume expansion
- d. none
- 2. For thermal expansion of gas, we generally ignore the expansion of gas container, because
  - a.  $\gamma$  of container is much greater than that of the gas contained
  - b.  $\gamma$  of gas contained is much greater than that of the container
  - c.  $\gamma$  of gas contained is equal to that of the container
  - d. Gas molecules do not exert any force on each other.

Ans: b.  $\gamma$  of gas contained is much greater than that of the container

- 3. For all ideal gasses at constant pressure
  - 1.  $\gamma$  is different for different gas
  - 3. vis same for all the gas

- 2.  $\gamma$  depends on the nature of gas container
- 4.  $\gamma$  is a fraction greater than one?.

Ans: c.  $\gamma$  is same for all the gas

4. For all ideal gasses at constant pressure -

a. 
$$\gamma = 273$$

$$b \nu = 0$$

b. 
$$y = 0$$
 c.  $y = -273$ 

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

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

- 5. The SI unit of coefficient of volume expansion of gas is
  - a. /°C
- b. /K

c. °C

d. K

**Ans:** b. /*K* 

- 6. The C.G.S unit of coefficient of volume expansion of gas is
  - a. /°C
- b. /K

c. °C

d. K

Ans: a. /°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
  - a. Initial volume
  - b. Change of temperature
  - c. Pressure on the gas
  - d. All of the above

Ans: d. All of the above

- 9. The volume expansion coefficient of ideal gas at constant pressure, depends on
  - a. Nature of gas
  - b. Change of temperature
  - c. Initial volume
  - d. None of the above

Ans: d. None of the above

- 10. Two different ideal gasses of volume *v* and 2*v* are mixed at constant pressure. Volume expansion coefficient of the mixture
  - a. Will remain same to  $\frac{1}{273}$
  - b. Will be  $\frac{1}{91}$
  - c. Depends on the nature of the gasses
  - d. 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
  - a. only Solid
  - b. only Liquid
  - c. only Gas
  - d. solid, liquid and gas all.

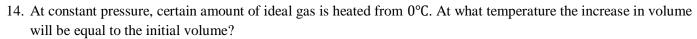
Ans: a. only Solid

- 12. 1*cc* ideal gas is heated (keeping pressure constant), such that the temperature increases from 0°C to 1°C. The increase in volume will be
  - a. 1cc
  - b. 273 cc
  - c.  $\frac{1}{273}$  *cc*
  - d. None of these

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

- 13.  $\gamma$  of any ideal gas at constant pressure is same, because
  - a. Ideally the gas molecules do not exert any force on each other
  - b. Gas molecules are mass less
  - c. Kinetic energy of gas molecules increase when temperature is increased
  - d. All of these

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



- a. 273 K
- b. 0 K
- c.  $\frac{1}{273}$  °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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