St. Lawrence High School

A Jesuit Christian Minority Institution

Term : Test

Solution of Work Sheet – 5

Class – X Subject – Physical Science Date – 28.11.20

Chapter –Revision(Behavior of gas, Thermal Phenomena)

Choose the correct option for the following questions. $1 \times 15 = 15$

1. The product of pressure and volume of 224lit of CO_2 gas at STP will be (R = Molar gas constant)
   a. 224R b. 10R c. 273 R d. 2730R

2. The pressure on certain mass of an ideal gas is doubled keeping its volume constant. If the initial temperature of the gas was 0°C, then its final temperature is
   a. 0°C b. $273K$ c. 546 K d. None of these

3. According to the kinetic theory of the ideal gas
   a. Mass of the gas molecules can be neglected
   b. Volume of the gas molecules can be neglected
   c. Both volume and mass can be neglected
   d. None of these

4. In Celsius scale, the temperature corresponds to 280K is
   a. 7°C b. 17°C c. 80°C d. 20°C

5. In how many gram of oxygen gas the number of oxygen molecules will be 6.023×10^{24}
   a. 320g b. 32g c. 16g d. 64g

6. The equation of state of 3.2g of oxygen gas will be –

   1) $PV = 2.24RT$ 2) $PV = RT$ 3) 10PV = RT 4) PV = 10RT

7. The increase in length in case of thermal expansion does not depend on
   a) Initial length b) increase in temperature
   c) nature of material d) measuring unit of temperature

8. If $\alpha : \beta : \gamma = 1 : 2 : 3$ then which relation is correct?
   a) $\frac{\alpha}{3} = \frac{\beta}{2} = \gamma$ b) $\alpha : \beta : \gamma = 1 : \frac{1}{2} : \frac{1}{3}$ c) $3\alpha = 2\beta$ d) $3\beta = 2\gamma$

9. Value of coefficient of volume expansion i.e. γ, depends on –
   a)The initial volume b) change in temperature
   c)nature of the material d) all of these

10. The apparent expansion coefficient of liquid is –
    a. Always greater than real expansion coefficient. b. Always less than real expansion coefficient.
    c. Always equal to real expansion coefficient d. Always lesser than expansion coefficient of container

11. The expansion coefficients of different liquids are different because –
    a. different liquids posses different intermolecular force of attraction
    b. different liquids have different initial volume
    c. different liquids have different free surface areas
    d. none of these

12. 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?.

13. 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.

14. Amount of flow of heat depends upon –
    a. Nature of the conductor
    b. Temperature difference between two ends of conductor
    c. The length and are of cross section of the conducting material
    d. All of the above

15. Thermal resistivity of a conducting slab –
    a. Increases if area of cross section increases
    b. Increases if length increases
    c. Decreases if length increases
    d. Does not depend on length and area of cross section

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