St. Lawrence High School

A Jesuit Christian Minority Institution

Solution of Work Sheet – 2

Class – X | Subject – Physical Science | Date – 10.04.20

Chapter – Thermal Phenomena | Topic – Expansion of liquid

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

1. The C.G.S unit of coefficient of volume expansion of gas is –
   a. J/K b. $cm/°C$ c. °C d. $°C^{-1}$
   Ans: d. $°C^{-1}$

2. The SI unit of real expansion coefficient of liquid is –
   a. K^{-1} b. K c. °C d. $°C^{-1}$
   Ans: a. K^{-1}

3. 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
   Ans: b. Always less than real expansion coefficient.

4. If γ_a = Apparent expansion coefficient of liquid , γ_r = Real expansion coefficient of liquid and γ_c = $volume$ expansion coefficient of the container, then γ_a =
   a. $\gamma_r - \gamma_c$ b. $\gamma_r + \gamma_c$ c. $\gamma_c - \gamma_r$ d. $\frac{\gamma_r \times \gamma_c}{\gamma_r + \gamma_c}$
   Ans: a. $\gamma_r - \gamma_c$

5. In case of liquid the change of volume depends on –
   a. Initial volume b. change of temperature. c. nature of liquid d. All of these
   Ans: d. All of these

6. A liquid can have
   a. All three types of expansion coefficients b. only superficial expansion coefficient
   c. only volume expansion coefficient d. only linear expansion coefficient
   Ans: c. only volume expansion coefficient

7. Real expansion coefficient will be –
   a. Always greater than apparent expansion coefficient b. always lesser than apparent expansion coefficient
   b. Always equal to apparent expansion coefficient d. equal to expansion coefficient of container
   Ans: a. Always greater than apparent expansion coefficient

8. 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
   Ans: a. different liquids posses different intermolecular force of attraction

9. The real expansion coefficient of liquid depends on –
   a. Initial volume b. change of volume c. change of temperature d. nature of liquid
   Ans: d. nature of liquid

10. Apparent expansion of liquid depends on –
   a. Expansion coefficient of container b. initial volume of liquid
   c. change in temperature d. all of these
   Ans: d. all of these

11. γ_a depends on –
   a. Initial volume b. nature of the liquid c. γ_c d. both b. and c
   Ans: d. both b. and c

12. $\gamma_c =$
   a. $\gamma_r + \gamma_a$ b. $\gamma_r - \gamma_a$ c. $\gamma_a - \gamma_r$ d. none of these
   Ans: b. $\gamma_r - \gamma_a$

13. Expansion of container =
   a. Real expansion of liquid – apparent expansion of liquid
   b. Real expansion of liquid + apparent expansion of liquid
   c. Apparent expansion of liquid – Real expansion of liquid
   d. None of these.
   Ans: a. Real expansion of liquid – apparent expansion of liquid

14. Apparent expansion of a particular liquid will be –
   a. Different in different container
   b. Same in all types of container
   c. Same in all type of container made up of same material but of different volume.
   d. None of these.
   Ans: a. Different in different container

15. Given, real expansion coefficient of petrol is $0.001/°C$. What could be the possible value of γ_a for petrol?
   a. $0.0015/°C$ b. $0.01/°C$ c. $0.00099/°C$ d. $1 \times 10^{-3}/°C$
   Ans: c. $0.00099/°C$

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