Maximum Marks: 10 **(OBJECTIVE TYPE)** Time Allowed: 10 Min.

NOTE: **Tick The Correct Option:**

1. **How should the conditions be changed to prevent the volume of a given gas form expanding when its mass is increased?**

   (a) Temperature is lowered and pressure is increased.

   (b) Temperature is increased and pressure is lowered.

   (c) Temperature and pressure both are lowered.

   (d) Temperature and pressure both are increased.

2. **Formula used for the conversion of °F into °C is:**

   (a) $°F = 9/5(°C) + 32$ (b) $°F = 5/9(°C) + 32$ (c) $°C = 5/9[°F - 32]$ (d) $°C = 9/5[°F - 32]$

3. **Partial pressure of oxygen in the air is:**

   (a) 156 torr (b) 157 torr (c) 158 torr (d) 159 torr

4. **The most common state of matter in the universe is:**

   (a) Solid (b) Liquid (c) Gas (d) Plasma

5. **The unit of pressure which is usually used in engineering work:**

   (a) Atm (b) Pa (c) psi (d) Millibar

6. **If the pressure on the gas is reduced to one half and the temperature is doubled, the volume will become:**

   (a) Half (b) Double (c) Four times (d) Same

7. **The number of molecules in 1 $dm^3$ of $CH_4$ at STP:**

   (a) $2.68 \times 10^{22}$ (b) $6.02 \times 10^{22}$ (c) $6.02 \times 10^{23}$ (d) $6.02 \times 10^{24}$

8. **'Dalton's Law of Partial Pressure' is obeyed only by those gases which:**

   (a) Do not react each other (b) Do not attract each other

   (c) Both 'a' & 'b' (d) None

9. **The deep sea divers use a mixture of _____ for breathing.**

   (a) $O_2$ & $N_2$ (b) $O_2$ & He (c) $O_2$ & Ar (d) $O_2$ & $CO_2$

10. **Which one is the example of effusion?**

    (a) Fragrance of flowers in the garden (b) Smell of the gas in the kitchen

    (c) Smelling a dead rat in the cupboard (d) All

## SECTION-I

**Q.2: Give brief answers to the following questions:** **(12)**

i. Define pressure. What is the SI unit of pressure?

ii. Justify that the volume of given mass of a gas becomes theoretically zero at -273°C.

iii. Do you think that the volume of any quantity of a gas becomes zero at −273.16°C? Is it not against the law of conservation of mass?

iv. Why are the densities of gases expressed in the units of g dm$^{-3}$, while that of liquids and solids are expressed in units of g cm$^{-3}$?

v. State Dalton's law of partial pressures. Give its expression.

vi. How does Dalton's law explain the process of respiration?

## SECTION-II

**NOTE:** **Attempt All Questions:** **(08)**

**Q.3: State Boyle's law. Give its experimental verification.**

**Q.4: What is ideal gas constant 'R'? Calculate its values in different units.**