ARJUNA (NEET)

STATES OF MATTER

DPP-03

1. At what temperature will a given mass of a gas occupy a volume of 200 L, if it occupies a volume of 260 L at a temperature of 30° C, pressure remaining constant ?
(A) 233 K (B) 400 K
(C) 493 K (D) 533 K

2. 450 mL of oxygen gas at 20°C is heated to 50°C. What is the new volume of the gas at constant pressure ?
(A) 50 ml (B) 323 ml
(C) 496.0 ml (D) 596.0 ml

3. At what temperature 25 dm^3 of oxygen at 283 K is heated to make its volume 30 dm^3?
(A) 339.6 K (B) 448 K
(C) 298 K (D) 473 K

4. On a ship sailing in Pacific Ocean where temperature is 23.4°C, a balloon is filled with 2L air. What will be the volume of the balloon when the ship reaches Indian Ocean, where temperature is 26.1°C ?
(A) 2.018 L (B) 4 L
(C) 5 L (D) 6 L

5. Calculate the resulting temperature change if a 20 mL of hydrogen at 15°C is isobarically expanded to 21.38 mL.
(A) 19.8 K (B) 23 K
(C) 48 K (D) 50 K

6. Which scale is known as thermodynamic scale of temperature ?

7. The cylinder of propane gas at 25°C exerted a pressure of 10 atmosphere. When exposed to sunlight it warmed up to 45°C. What pressure does the container now experience?
(A) 10.67 atm (B) 10 atm
(C) 40 atm (D) 19.67 atm

8. A container is filled with hydrogen gas at a pressure of 15 atm at 15°C. At what temperature will the pressure inside the container be 30 atm ?
(A) 400°C (B) 500°C
(C) 303°C (D) 393°C

9. Calculate the value of proportionality constant k for 1 mole of a gas which occupies 22.4 L of volume under the given conditions of temperature and pressure.
(A) 22.4 L mol^{-1} (B) 44.8 L mol^{-1}
(C) 49 L mol^{-1} (D) 44 L mol^{-1}

10. How is the density of a gas related to its molar mass?

ANSWERS

1. (A)

2. (C)

3. (A)

4. (A)

5. (A)

6. Kelvin temperature

7. (A)

8. (C)

9. (A)

10. Density of gas is directly proportional to Molar mass