Date Planned : __ / __ / __	Daily Tutorial Sheet-11	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Numerical Value Type for JEE Main	Exact Duration :_____

126. A container having 3 mole of ideal gas occupies 60 litres at pressure P and temperature T. If 0.1 mole of gas is introduced at same P and T in container the change in volume will be _____ litre.

127. An ideal gas on heating from 100 K to 109 K shows an increase by $a\%$ in its volume at constant P. The value of a is _____.

128. A bulb is having ideal gas at 27°C. On heating the bulb to 227°C, 2 litre of gas measured at 227°C is expelled out. The volume of bulb in litre is _____.

129. A cylinder containing 5 litre of O_2 at 25°C was leaking. When the leakage was detected and checked, the pressure inside cylinder was reduced from 8 atm to 2 atm. The ratio of mass of O_2 initially present to that left after leakage is equal to _____.

130. 16 mL of He gas effuses through a pin hole in 4 sec from a container having P_{He} equal to 1 atm. If same container is filled with CH_4 having pressure 2 atm, how much volume (in mL) of CH_4 will be leaked through same pin hole in 2 sec? ▶

131. Root mean square speed of a gas is $5\,ms^{-1}$. If some molecules out of 10 molecules in all are moving with $7\,ms^{-1}$ and rest all the molecules moving with $3\,m\,sec^{-1}$, then number of molecules moving with higher speed is _____.

132. A metallic carbonyl $M(CO)_X$ is in gaseous state. The rate of diffusion of CH_4 is 3.31 time faster than this gaseous carbonyl under identical conditions. If atomic mass of metal is 63.29, the closest integer value of X is_____.

133. A gas has molecular formula O_n. If its vapour density is 24, the value of n is _____.

134. The density of vapours of a substance at 1 atm and 500 K is $0.3\,kg\,m^{-3}$. The vapours effuse 0.4216 times faster than O_2 through a pin hole under identical conditions. If R = 0.08 litre atm $K^{-1}\,mol^{-1}$. The molar volume of gas is $a \times 10^2$ litre. The value of a is _____. ▶

135. A flask of capacity 10 litre containing air is heated from 27°C to 327°C. The ratio of mole of air present at 27°C to mole present at 327°C is _____.

136. 0.75 mole of solid A_4 and 2 mole of gaseous O_2 are heated to react completely in a sealed bottle to produce gaseous compound A_3O_n. After the compound is formed, the vessel is brought to initial temperature, the pressure is found to half of initial pressure. The value of n is _____.

137. A graph is plotted for a vanderwaal's gas between PV_m *vs* P leading to an intercept of 22.16 litre-atm. The temperature of gas at which these observations of P and V_M were made is _____ °C. ▶
(R = 0.08 litre atm $K^{-1}\,mol^{-1}$)

138. Two boxes A and B having their volume ratio 1 : 4 and filled with Ne are inter connected through a narrow tube of negligible volume. Box A is kept at 300 K and box B at 600 K. The ratio of mole of Ne gas in box B to box A is _____?

139. The density of the vapour of a substance at 1 atm and 500 K is $0.36 \, \text{kg m}^{-3}$. If molar mass of gas is $18 \, \text{g mol}^{-1}$, the molar volume of gas is $5 \times 10^a \, \text{m}^3 / \text{mol}$. What is the value of a ?

140. The ratio of final to initial pressures of a gas when u_{rms} of a gas in a container is increased from $5 \times 10^4 \, \text{cm sec}^{-1}$ to $10 \times 10^4 \, \text{cm sec}^{-1}$.