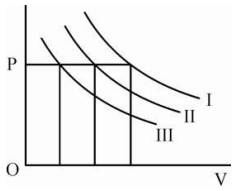
Date Planned : __ / __ / __	Daily Tutorial Sheet-7	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-2	Exact Duration :_____

86. I, II, III are three isotherms respectively at T_1, T_2 and T_3. Temperature will be in order :



(A) $T_1 = T_2 = T_3$ **(B)** $T_1 < T_2 < T_3$

(C) $T_1 > T_2 > T_3$ **(D)** $T_1 > T_2 = T_3$

87. An evacuated glass vessel weighs 50 gm when empty, 148.0 gm filled with a liquid of density 0.98 gm ml^{-1} and 50.5 gm when filled with an ideal gas at 760 mm of Hg at 300 K. What is the molecular weight of the gas ?

(A) 100 **(B)** 110 **(C)** 122 **(D)** 90

88. Under same conditions of temperature and pressure, a hydrocarbon of molecular formula C_nH_{2n-2} was found to diffuse $3\sqrt{3}$ times slower than hydrogen. Find the value of n.

(A) n = 2 **(B)** n = 4 **(C)** n = 3 **(D)** n = 1

***89.** For an ideal gas, under isobaric condition, a graph between log V vs log T :

(A) is linear with unit slope **(B)** represents Boyle's Law

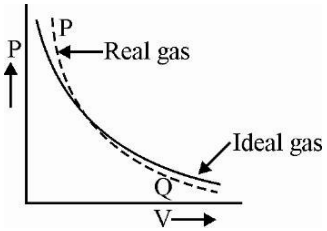
(C) represents Charle's Law **(D)** represents Gay-Lussac's Law

90. At STP, a container has 1 mole of Ar, 2 moles of CO_2, 3 moles of O_2 and 4 moles of N_2. Without changing the total pressure if one mole of O_2 is removed, the partial pressure of O_2 :

(A) is changed by about 26% **(B)** is halved

(C) is unchanged **(D)** changed by 33%

91. At point P and Q, the real gas deviation with respect to ideal gas is respectively :



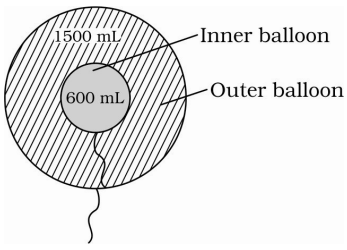
(A) Positive, negative **(B)** Positive, positive

(C) Negative, positive **(D)** Negative, negative

92. At what temperature will the total K.E. of 0.3 mol of He be the same as the total KE of 0.40 mol of Ar at 400 K ?

(A) 533 K **(B)** 400 K **(C)** 346 K **(D)** 300 K

93. Two inflated balloons I and II (thin skin) having volume 600 mL and 1500 mL at 300 K are taken as shown in diagram. If maximum volume of inner and outer balloons are 800 mL and 1800 mL respectively then find the balloon which will burst first on gradual heating.



(A) inner balloon **(B)** outer balloon

(C) both simultaneously **(D)** unpredictable

94. The volume of a gas increases by a factor of 2 while the pressure decreases by a factor of 3. Given that the number of moles is unaffected, the factor by which the temperature changes is :

(A) $\frac{3}{2}$ **(B)** 3×2 **(C)** $\frac{2}{3}$ **(D)** $\frac{1}{2} \times 3$

95. Oxygen gas generated by the decomposition of potassium chlorate is collected. The volume of oxygen collected at $24^{\circ}C$ and atmospheric pressure of 760 mmHg is 128 mL. Calculate the mass (in grams) of oxygen gas obtained. The pressure of the water vapour at $24^{\circ}C$ is 22.4 mmHg.

(A) 1.36 **(B)** 1.52 g **(C)** 0.163 g **(D)** 1.63 g