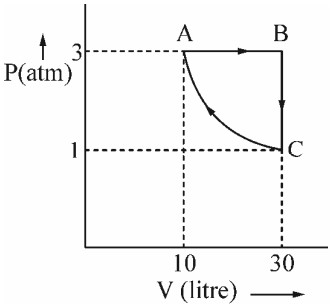
Date Planned : __ / __ / __	Daily Tutorial Sheet-12	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-3	Exact Duration :_____

Paragraph for Question No. 141 to 143

1 mole of an ideal gas undergoes different thermodynamic process in P-V diagram shown as below :

Assume all the steps are reversible (R = 0.08 litre atm $mol^{-1}, \log 3 = 0.5$, R = $8 JK^{-1}mol^{-1}$)



Choose the correct answer:

141. What will be net amount of work done in atm litre during the entire thermodynamics process as shown in the above diagram?

(A) –94.5 **(B)** +94.5 **(C)** 50 **(D)** –25.45

142. What will be the temperature at A and point *C*?

(A) 375 K, 375 K **(B)** 600 K, 600 K **(C)** 750 K, 750 K **(D)** 1500 K, 1500 K

143. What will the value of ΔU and ΔH be for overall process?

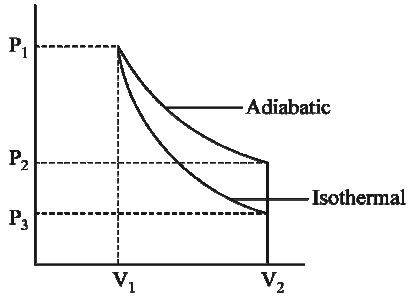
(A) 15, 0.01 **(B)** 0, 0 **(C)** 10, 0.02 **(D)** 8, 2

Paragraph for Question No. 144 – 146

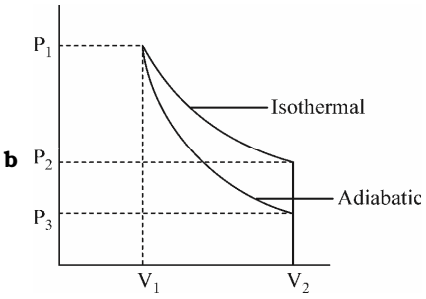
A sample of ideal gas undergoes isothermal expansion in a reversible manner from volume V_1 to volume V_2. The initial pressure is P_1 and the final pressure is P_2. The same sample is then allowed to undergo reversible expansion under adiabatic conditions from volume V_1 to V_2. The initial pressure being same but final pressure is P_2.

144. Which graphic representation is **CORRECT**?

a



b



145. If P_3 and P_2 are equal, then

(A) $V_{2(adi)} = V_{2(iso)}$ **(B)** $V_{2(adia)} < V_{2(iso)}$

(C) Both $V_{2(adi)} = V_{2(iso)} < V_1$ **(D)** $V_{2(adi)} > V_{2(iso)}$

146. Which relation is correct for adiabatic process $\left(\gamma = \frac{C_P}{C_V}\right)$?

(A) $P_1 V_1 = P_2 V_3$ **(B)** $P_2 V_1 = P_3 V_2$ **(C)** $P_1 V_1^{\gamma} = P_2 V_2^{\gamma}$ **(D)** $\frac{P_1}{P_2} = \left(\frac{V_2}{V_1}\right)^{\gamma - 1}$