

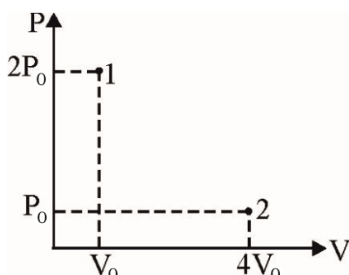




Date Planned : __ / __ / __	Daily Tutorial Sheet-13	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-3	Exact Duration : _____


147. What is the final temperature of 0.10 mole monoatomic ideal gas that performs 75 cal of work adiabatically if the initial temperature is  $227^\circ\text{C}$ ? (use  $R = 2 \text{ cal/K-mol}$ ) 
- (A) 250 K      (B) 300 K      (C) 350 K      (D) 750 K

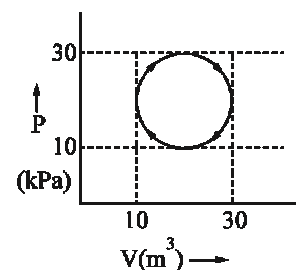
148. A liquid which is confined inside an adiabatic piston is suddenly taken from state-1 to state-2 by a single stage irreversible process. If the piston comes to rest at point 2 as shown, then the enthalpy change for the process will be: 



- (A)  $\Delta H = \frac{2\gamma P_0 V_0}{\gamma - 1}$       (B)  $\Delta H = \frac{3\gamma P_0 V_0}{\gamma - 1}$
- (C)  $\Delta H = -P_0 V_0$       (D) None of these
149. A gas expands against a variable pressure given by  $P = \frac{20}{V}$  (where P in atm and V in L). During 400 J. How much heat is absorbed by the gas during expansion? 
- (A) 46 J      (B) 4660 J      (C) 5065.8 J      (D) 4260 J
150. Match the following 

Column I		Column II	
(A)	$\text{O}_2$	(p)	$\gamma = 1.4$
(B)	$\text{N}_2$	(q)	$C_P = \frac{7}{2}R$
(C)	$\text{CO}_2$	(r)	$C_V = \frac{17}{6}R$
(D)	1 mol $\text{O}_2$ + 2 mol $\text{O}_3$	(s)	$\gamma = 1.33$

- \*151. Which one is correct for a cyclic process as shown in the figure? 
- (A)  $dU = 0$       (B)  $q = -w$
- (C)  $|w| = 314 \text{ J}$       (D)  $|w| = 31.4 \text{ J}$



152. One mole of ideal monoatomic gas is carried through the reversible cyclic process as shown in figure. Calculate net heat absorbed by the gas in the path BC.

(A)  $\frac{1}{2}P^0V^0$

(B)  $\frac{7}{2}P^0V^0$

(C)  $2P^0V^0$

(D)  $\frac{5}{2}P^0V^0$

