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

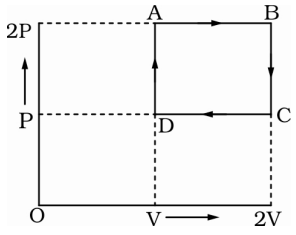
86. What will be the entropy change when two moles of an ideal gas expand reversibly from initial volume of 1 litre to 10 litre at constant temperature of 300 K?

(A) $19.15\ JK^{-1}\,mol^{-1}$ **(B)** $38.27\,JK^{-1}mol^{-1}$

(C) $11.48kJK^{-1}mol^{-1}$ **(D)** $5.74\,kJK^{-1}mol^{-1}$

Paragraph for Question No. 87 – 89

The state of a mole of an ideal gas changed from state A at pressure 2P and volume V follows four different processes and finally returns to initial state A reversibly as shown below in the graph. By interpreting the graph, answer the following questions.



87. Which is the kind of process followed from state A to state B?

(A) Isochoric expansion **(B)** Isobaric expansion

(C) Isothermal reversible expansion **(D)** Isothermal irreversible compression

88. In state D to state A, what kind of process is followed?

(A) Isobaric expansion **(B)** Isobaric compression

(C) Isochoric process **(D)** Isothermal compression

89. What would the be total work done by the gas?

(A) –PV **(B)** PV **(C)** 0 **(D)** None of these

90. What would be the work done in state B to C?

(A) –PV **(B)** PV **(C)** 2PV **(D)** Zero

91. What would be the heat absorbed by the system in this cyclic process?

(A) –2PV **(B)** Zero **(C)** 2PV **(D)** PV

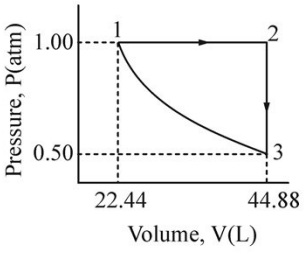
Paragraph for Question No. 92 – 95

A sample consisting of 1 mole of a mono-atomic perfect gas $\left(C_V = \frac{3}{2}R\right)$ is taken through the cycle as shown.

92. Temperature at points (1), (2), and (3), respectively is:

(A) 273 K, 546 K, 273 K **(B)** 546 K, 273 K, 273 K

(C) 273 K, 273 K, 273 K **(D)** 546 K, 546K, 273 K



93. ΔH for the overall cycle is:

(A) $+5.67\times10^3 J$ **(B)** $-5.67\times10^3 J$

(C) $-11.34\times10^3 J$ **(D)** zero

94. ΔU for the process $(1 \to 2)$ is:

(A) 0.00J **(B)** $+3.40\times10^3 J$ **(C)** –3.40 J **(D)** -3.40×10^3 J

95. ΔU for the process $(2 \to 3)$ is:

(A) 0.00 J **(B)** +3.40 kJ **(C)** – 3.40 kJ **(D)** None of these