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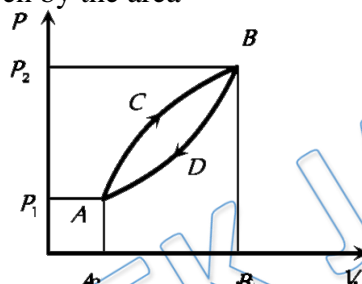
Video Solution on YouTube:-

<https://youtu.be/faSLnSanUgI>

Written Solution on Website:-

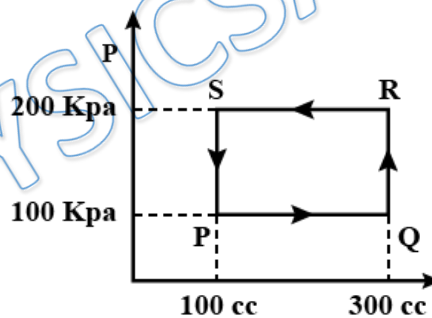
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- Q 1. A thermodynamic system is taken from state A to B along ACB and is brought back to A along BDA as shown in the PV diagram. The net work done by system during the complete cycle is given by the area



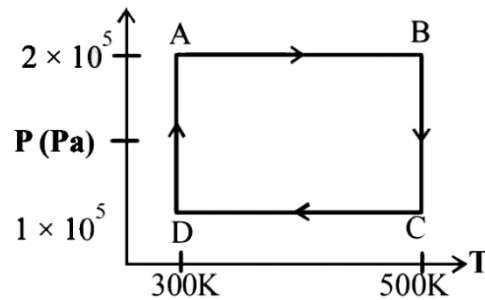
- (a)  $P_1ABCP_2P_1$
- (b)  $ACBB'A'A$
- (c)  $ACBDA$
- (d)  $ADBB'A'A$

- Q 2. A thermodynamic system is taken through the cycle PQRSP process. The net work done by the system is



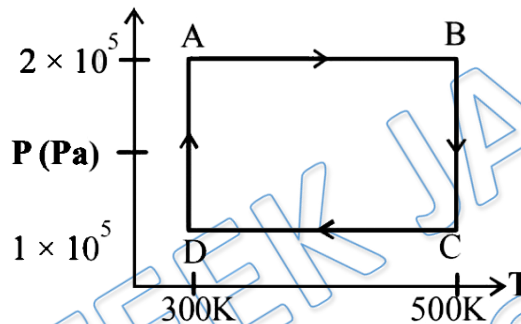
- (a) 20 J
- (b) -20 J
- (c) 400 J
- (d) -374 J

- Q 3. Two moles of helium gas are taken over the cycle ABCDA, as shown in the P-T diagram. The work done on the gas in taking it from D to A is:



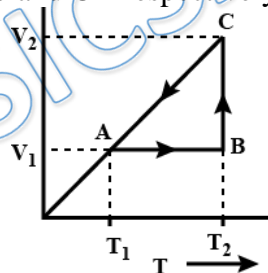
- (a)  $+414R$                       (b)  $-690R$   
 (c)  $+690R$                       (d)  $-414R$

Q 4. Two moles of helium gas are taken over the cycle ABCDA, as shown in the P-T diagram. Assume the gas to be ideal the magnitude of work done on the gas in taking it from A to B is:



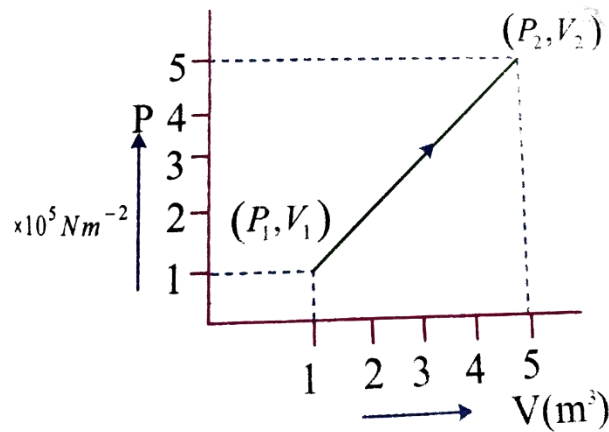
- (a)  $200R$                       (b)  $300R$   
 (c)  $400R$                       (d)  $500R$

Q 5. A cyclic process for 1 mole of an ideal gas is shown in figure in the V-T, diagram. The work done by gas in AB, BC and CA respectively



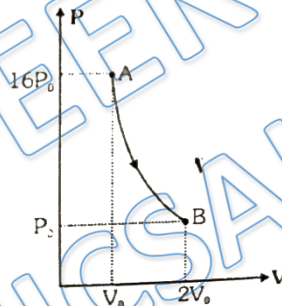
- (a)  $0, RT_2 \ln\left(\frac{V_1}{V_2}\right), R(T_1 - T_2)$   
 (b)  $R(T_1 - T_2), 0, RT_1 \ln\left(\frac{V_1}{V_2}\right)$   
 (c)  $0, RT_2 \ln\left(\frac{V_2}{V_1}\right), R(T_1 - T_2)$   
 (d)  $0, RT_2 \ln\left(\frac{V_2}{V_1}\right), R(T_2 - T_1)$

Q 6. A system changes from the state  $(P_1, V_1)$  to  $(P_2, V_2)$  as shown in the diagram. The work done by the system is



- (a)  $12 \times 10^4 \text{J}$
- (b)  $12 \times 10^8 \text{J}$
- (c)  $12 \times 10^5 \text{J}$
- (d)  $6 \times 10^4 \text{J}$

Q 7. Figure demonstrates a polytropic process (i.e.  $PV^n = \text{constant}$ ) for an ideal gas. The work done by the gas be in the process AB is:

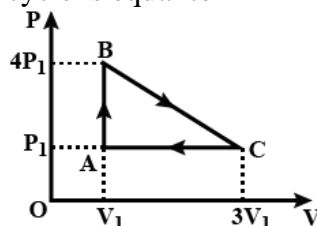


- (a)  $\frac{15}{2} P_0 V_0$
- (b)  $\frac{14}{3} P_0 V_0$
- (c)  $8 P_0 V_0$
- (d) Insufficient information

Q 8. The work done in an isochoric process is

- (a) zero
- (b) +ve
- (c) -ve
- (d) Any of these

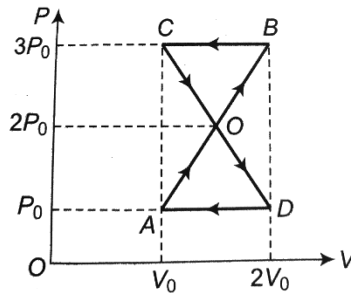
Q 9. An ideal gas is taken around the cycle ABCA shown in P-V diagram. The net work done by the gas during the cycle is equal to





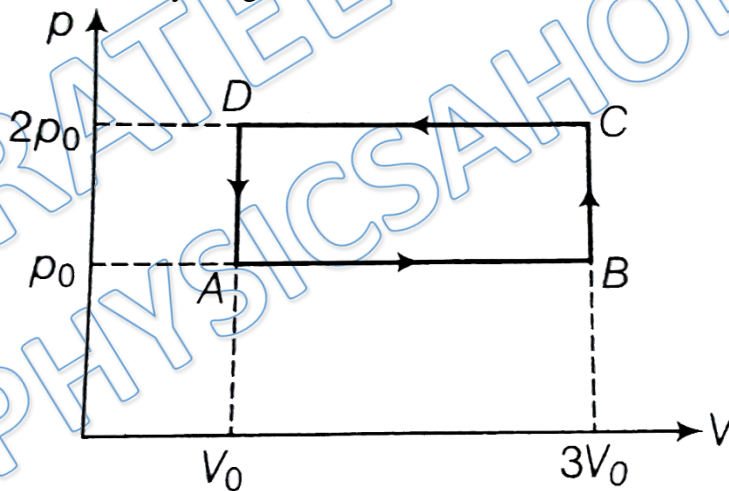
- (a)  $12P_1V_1$
- (b)  $6P_1V_1$
- (c)  $3P_1V_1$
- (d)  $P_1V_1$

Q 10. A thermodynamic system undergoes cyclic process ABCDA as shown in figure. The work done by the system is



- (a)  $P_0V_0$
- (b)  $2P_0V_0$
- (c)  $\frac{3P_0V_0}{2}$
- (d) zero

Q 11. An ideal gas undergoes cyclic process ABCDA as shown in given P-V diagram. The amount of work done by the gas is



- (a)  $6P_0V_0$
- (b)  $-2P_0V_0$
- (c)  $+2P_0V_0$
- (d)  $+4P_0V_0$



## Answer Key

<b>Q.1 c</b>	<b>Q.2 b</b>	<b>Q.3 a</b>	<b>Q.4 c</b>	<b>Q.5 c</b>
<b>Q.6 c</b>	<b>Q.7 b</b>	<b>Q.8 a</b>	<b>Q.9 c</b>	<b>Q.10 d</b>
<b>Q.11 b</b>				

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