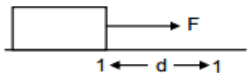
HC Verma Solutions Laws of Thermodynamics

http://www.learncbse.in/laws-thermodynamics-hc-verma-concepts-physics-solutions/
https://goo.gl/KymwzN
https://goo.gl/kuVwE9
https://goo.gl/MAJjss
http://cbsetuts.blogspot.in/2018/01/hc-verma-solutions-laws-of.html
https://goo.gl/zSvFnv
https://sites.google.com/site/aplustoppernotes/hc-verma-solutions-laws-of-thermodynamics
https://goo.gl/mFKwT2

Laws of Thermodynamics HC Verma Concepts of Physics Solutions

Laws of Thermodynamics HC Verma Concepts of Physics Solutions Chapter 26

1. No in isothermal process heat is added to a system. The temperature does not increase so the internal energy does not.
2. Yes, the internal energy must increase when temp. increases; as internal energy depends upon temperature $U \propto T$
3. Work done on the gas is 0. as the P.E. of the container si increased and not of gas. Work done by the gas is 0. as the gas is not expanding.
   The temperature of the gas is decreased.
4. $W = F \times d = Fd \cos 0° = Fd$
   Change in PE is zero. Change in KE is non Zero.
   So, there may be some internal energy.

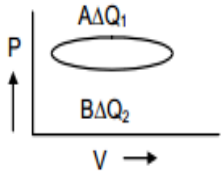


5. The outer surface of the cylinder is rubbed vigorously by a polishing machine.
   The energy given to the cylinder is work. The heat is produced on the cylinder which transferred to the gas.
6. No. work done by rubbing the hands in converted to heat and the hands become warm.
7. When the bottle is shaken the liquid in it is also shaken. Thus work is done on the liquid. But heat is not transferred to the liquid.
8. Final volume = Initial volume. So, the process is isobaric.
   Work done in an isobaric process is necessarily zero.
9. No word can be done by the system without changing its volume.
10. Internal energy = $U = nC_VT$
    Now, since gas is continuously pumped in. So $n_2 = 2n_1$ as the $p_2 = 2p_1$. Hence the internal energy is also doubled.
11. When the tyre bursts, there is adiabatic expansion of the air because the pressure of the air inside is sufficiently higher than atmospheric pressure. In expansion air does some work against surroundings. So the internal energy decreases. This leads to a fall in temperature.
12. 'No', work is done on the system during this process. No, because the object expands during the process i.e. volume increases.
13. No, it is not a reversible process.
14. Total heat input = Total heat out put i.e., the total heat energy given to the system is converted to mechanical work.

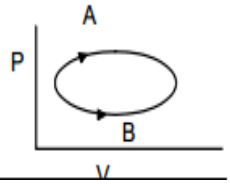
15. Yes, the entropy of the body decreases. But in order to cool down a body we need another external sink which draws out the heat the entropy of object in partly transferred to the external sink. Thus once entropy is created. It is kept by universe. And it is never destroyed. This is according to the 2nd law of thermodynamics

OBJECTIVE – I

1. (d) Dq = DU + DW. This is the statement of law of conservation of energy. The energy provided is utilized to do work as well as increase the molecular K.E. and P.E.
2. (b) Since it is an isothermal process. So temp. will remain constant as a result 'U' or internal energy will also remain constant. So the system has to do positive work.
3. (a) In case of A $\Delta W_1 > \Delta W_2$ (Area under the graph is higher for A than for B).
   $\Delta Q = \Delta u + dw$.
   du for both the processes is same (as it is a state function)
   $\therefore \Delta Q_1 > \Delta Q_2$ as $\Delta W_1 > \Delta W_2$



4. (b) As Internal energy is a state function and not a path function. $\Delta U_1 = \Delta U_2$



- HC Verma Solutions,
- HC Verma,
- Solution of HC Verma Concept of Physics,
- Concepts of Physics Part 1 - HC Verma Solutions,
- HC Verma Concepts of Physics Solutions part 1 and part 2,
- HC Verma Solutions For Physics,
- hc verma part 1 pdf,
- h.c verma solutions free download full book,
- hc verma part 2 pdf,
- hc verma objective solutions,
- hc verma short answer solutions pdf,
- Physics HC Verma 1 - Solutions,
- Chapter wise solutions to HC Verma's Concepts of Physics,
- HC Verma Solutions Both Parts,
- HC VERMA SOLUTIONS (CHAPTERWISE)

Read more about HC Verma Solutions Laws of Thermodynamics