19-08
0.36-65%

Question 234
A system of an ideal gas undergoes the cyclic process shown in figure 5. Calculate the work done by the system along the path XY.

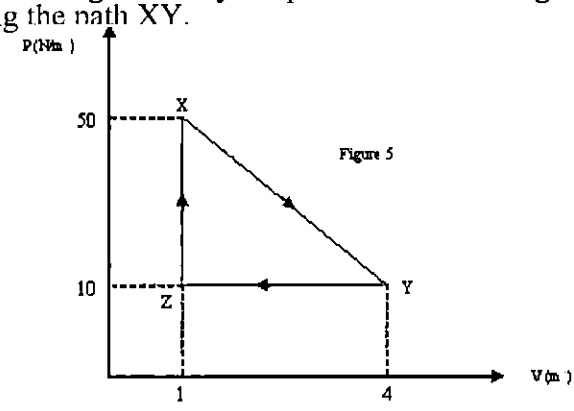

Figure 5

(a) -60 J.
(b) zero
(c) 60 J.
(d) 90 J.
(e) -90 J.

19-08
0.40-26%

Question 235
In a PV diagram, a system of an ideal gas goes through the process shown in Figure 3. How much heat is absorbed after the system goes through this cycle 10 times. [Take P= 1.0 Pa and V= 1.0 m**3].

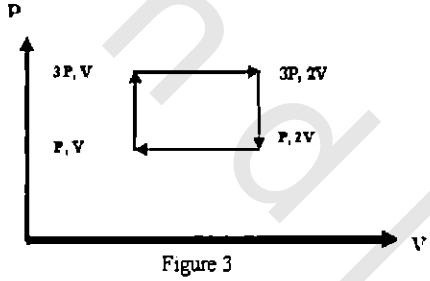

Figure 3

(a) 15 Joules.
(b) 20 Joules.
(c) 5 Joules.
(d) 25 Joules.
(e) 2 Joules.

19-9 The first Law of Thermodynamics

19-09
0.32-26%

Question 236
Which of the following statements are CORRECT:
1. The first law of thermodynamics represents the conservation of energy.
2. Room temperature is about 20 degrees on the Kelvin scale.
3. A caloric is approximately 4.2 J.
4. Heat has the same units as work.
5. Heat is a temperature difference.

(a) 1, 3, and 4.
(b) 3 and 5.
(c) 1 and 5.
(d) 1, 2 and 3.
(e) 2 and 4.