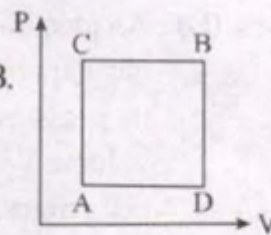


2. A gas can be taken from A to B via two different processes ACB and ADB. When path ACB is used 60 J of heat flows into the system and 30J of work is done by the system. If path ADB is used work done by the system is 10 J. The heat Flow into the system in path ADB is :



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- (a) 40 J (b) 80 J (c) 100 J (d) 20 J

2. (a) ΔU remains same for both paths ACB and ADB

$$\Delta Q_{ACB} = \Delta W_{ACB} + \Delta U_{ACB}$$

$$\Rightarrow 60 \text{ J} = 30 \text{ J} + \Delta U_{ACB}$$

$$\Rightarrow \Delta U_{ACB} = 30 \text{ J}$$

$$\therefore \Delta U_{ADB} = \Delta U_{ACB} = 30 \text{ J}$$

$$\Delta Q_{ADB} = \Delta U_{ADB} + \Delta W_{ADB}$$

$$= 10 \text{ J} + 30 \text{ J} = 40 \text{ J}$$

