

$$= 10 \text{ J}$$

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

$$209 = \Delta U_{AB} + 10 \Rightarrow \Delta U_{AB} = 209 - 10 = 199 \text{ J}$$

For process ADB : $\Delta W_{ADB} = W_{AD} + W_{DB}$

$$= 0 + p'(V_B - V_A)$$

$$= 0 + 155 \times 10^3 \times 200 \times 10^{-6}$$

$$= 31 \text{ J}$$

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

$$= 199 + 31 = 230 \text{ J}$$