Sl.No	Process	workdone (W) KJ	change in Internal Energy (ΔV) KJ	Heat Transfer (Q) KJ	change in Enthalpy (ΔH) KJ	change in Entropy (ΔS) (KJ/K)	P.V.T Relations.
1.	constant volume process $V=C$	zero	$mC_v(T_2-T_1)$	$mC_v(T_2-T_1)$	$mC_p(T_2-T_1)$	$mC_v \ln\left(\frac{T_2}{T_1}\right)$ (or) $mC_v \ln\left(\frac{P_2}{P}\right)$	$\frac{P_1}{T_1}=\frac{P_2}{T_2}$
2.	constant pressure process $P=C$	$P(V_2-V_1)$ (or) $mR(T_2-T_1)$	$mC_v(T_2-T_1)$	$mC_p(T_2-T_1)$	$mC_p(T_2-T_1)$	$mC_p \ln\left(\frac{T_2}{T_1}\right)$ (or) $mC_p \ln\left(\frac{V_2}{V_1}\right)$	$\frac{V_1}{T_1}=\frac{V_2}{T_2}$
3.	constant Temperature process $T=C$	$P_1V_1 \ln\left(\frac{V_2}{V_1}\right)$ (or) $mRT_1 \ln\left(\frac{V_2}{V_1}\right)$	zero	$P_1V_1 \ln\left(\frac{V_2}{V_1}\right)$ (or) $mRT_1 \ln\left(\frac{V_2}{V_1}\right)$	zero	$mR \cdot \ln\left(\frac{V_2}{V_1}\right)$ (or) $mR \ln\left(\frac{P_2}{P_1}\right)$	$P_1V_1=P_2$
4.	Reversible adiabatic Process (or) Isentrophic Process $(PV^\gamma=C)$	$\frac{P_1V_1-P_2V_2}{\gamma-1}$ (or) $\frac{mR(T_1-T_2)}{\gamma-1}$	$mC_v(T_2-T_1)$	zero	$mC_p(T_2-T_1)$	zero	$\left(\frac{P_1}{P_2}\right)=\left(\frac{V_1}{V_2}\right)^\gamma$ $\left(\frac{T_2}{T_1}\right)=\left(\frac{V_1}{V_2}\right)^{\gamma-1}$ $\left(\frac{T_2}{T_1}\right)=\left(\frac{P_2}{P_1}\right)^{\frac{\gamma-1}{\gamma}}$

S.							
	Polytrophic process $(pV^n = C)$	$\frac{P_1V_1 - P_2V_2}{n-1}$ (or) $\frac{mR(T_1 - T_2)}{n-1}$	$mc_v(T_2 - T_1)$	$W \times \left(\frac{\gamma - n}{\gamma - 1}\right)$	$mc_p(T_2 - T_1)$	$mR\ln\left(\frac{V_2}{V_1}\right)$ + $mc_v \ln\left(\frac{T_2}{T_1}\right)$ (or) $\left(\frac{\gamma - n}{\gamma - 1}\right) \times mR\ln\left(\frac{V_2}{V_1}\right)$	$\left(\frac{P_1}{P_2}\right) = \left(\frac{V_1}{V_2}\right)^n$ $\left(\frac{T_2}{T_1}\right) = \left(\frac{V_1}{V_2}\right)^{n-1}$ $\left(\frac{T_2}{T_1}\right) = \left(\frac{P_2}{P_1}\right)^{\frac{n-1}{n}}$