ADIBIDEA : GAS IDEALARI DAGOKION ENTROPIA

$$dS = \frac{\delta Q_{IG}}{dT}$$

(i) (a) $\Delta S = \int \frac{\delta Q_{IG}}{T} = \int \frac{1}{T}[C_p dT - V dp] = \int \frac{C_p}{T} dT - \int \frac{V}{T} dp$

$$\Delta S \equiv S - S_r = C_p \ln \frac{T}{T_r} - nR \ln \frac{P}{P_r}$$

$$S = C_p \ln T - nR \ln P + \{S_r - C_p \ln T_r + nR \ln P_r\}$$

$$S = C_p \ln T - nR \ln P + S_o$$

(b) $dS = \frac{1}{T} C_p dT - \frac{1}{P} nR dp \rightsquigarrow$

$$S = \int \frac{C_p}{T} dT - nR \ln P + S_o$$

(ii) (a) $\Delta S = \int \frac{\delta Q_{IG}}{T} = \int \frac{1}{T}[C_v dT + p dV] = \int \frac{C_v}{T} dT + \int \frac{P}{T} dV$

$$\Delta S \equiv S - S_r = C_v \ln \frac{T}{T_r} + nR \ln \frac{V}{V_r}$$

$$S = C_v \ln T + nR \ln V + \{S_r + C_v \ln T_r + nR \ln V_r\}$$

$$S = C_v \ln T + nR \ln V + S_o$$

(b) $dS = \frac{1}{T} C_v dT + \frac{1}{V} nR dV \rightsquigarrow$

$$S = \int \frac{C_v}{T} dT + nR \ln V + S_o$$