

JEE previous year questions:

Chemical Thermodynamics-VIII

1. The incorrect expression among the following is :

A $\frac{\Delta G_{System}}{\Delta S_{Total}} = -T$ (at constant P)

B $K = \frac{\Delta H^\circ - T\Delta S^\circ}{RT}$

C $K = e^{-\Delta G^\circ/RT}$

D For isothermal process $w_{reversible} = -nRT \ln \frac{V_f}{V_i}$

(Mains'21)

Ans: B)

Explanation:

$$\Delta G^0 = -RT \ln K$$

$$\Delta H^0 - T\Delta S^0 = -RT \ln K$$

$$\ln K = -[\Delta H^0 - T\Delta S^0]/RT$$