Question: For a reaction A (g)→B(g) at equilibrium. The partial pressure of B is found to be one fourth of the partial pressure of A. The value of ΔG°of the reaction A→B is

(1) $RT\ln 4$

(2)$-RT\ln 4$

(3) $RT\log 4$

(4)$-RT\log 4$

Solution:

$\Delta G = \Delta G_0 + RT\ln(P_B/P_A)$;

$\Delta G_0 = -RT\ln(P_B/P_A)$;

$\Delta G_0 = -RT\ln(1/4) = RT\ln 4$.

Answer: $RT\ln 4$.