

Yakeen NEET 2.0 2026

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DPP: 8

Thermodynamics & Thermochemistry

Q1 The equilibrium constant for a reaction is 100 what will be the value of ΔG° ?

$R = 8.314 \text{ JK}^{-1} \text{ mol}^{-1}$, $T = 300 \text{ K}$:

- (A) -11488 kJ
 (B) -11.488 kJ
 (C) -12 kJ
 (D) -12000 kJ

Q2 For the reaction: $\text{N}_2\text{O}_4(\text{g}) \rightleftharpoons 2\text{NO}_2(\text{g})$
 $\Delta U = 2.0 \text{ Kcal}$, $\Delta S = 50 \text{ cal K}^{-1}$ at 300 K

Calculate ΔG

- (A) $+12.4 \text{ kcal}$
 (B) -12.4 kcal
 (C) -6.4 kcal
 (D) $+6.4 \text{ kcal}$

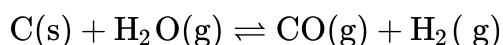
Q3 Which relation is **incorrect**:

- (A) $\Delta G = -T\Delta S_T$
 (B) $\Delta G^\circ = -2.303 RT \log K$
 (C) $\Delta H = \Delta U + \Delta n_g RT$
 (D) $W_{\text{useful}} = \Delta H$

Q4 Which is always correct at equilibrium

- (A) $\Delta G^\circ = 0$
 (B) $\Delta G = 0$
 (C) $\Delta S_{\text{system}} = 0$
 (D) $\Delta E = 0$

Q5 For the water gas reaction



The standard Gibbs energy of reaction (at 1000 K) is -8.1 kJ mol^{-1} . Value of

equilibrium constant is-

- (A) 2.6 (B) 6.2
 (C) 8.2 (D) 10

Q6 For vaporization of water at 1 atm pressure, the values of ΔH and ΔS are $40.63 \text{ kJ mol}^{-1}$ and $108.8 \text{ JK}^{-1} \text{ mol}^{-1}$ respectively. The temp. at which Gibbs energy change (ΔG) for this transformation will be zero is:

- (A) 273.4 K
 (B) 393.4 K
 (C) 373.4 K
 (D) 293.4 K

Q7 Calculate ΔG° for the conversion of oxygen to ozone, $3/2\text{O}_2(\text{g}) \rightarrow \text{O}_3(\text{g})$ at 298 K . If K_P for this conversion is 3×10^{-29} .

- (A) $+175.3 \text{ kJ mol}^{-1}$
 (B) $+162.7 \text{ kJ mol}^{-1}$
 (C) $-162.7 \text{ kJ mol}^{-1}$
 (D) $-140.5 \text{ kJ mol}^{-1}$

Q8 Identify the correct statement regarding entropy.

- (A) At 0°C , the entropy of a perfectly crystalline substance is taken to be zero.
 (B) At absolute zero temp. the entropy of a perfectly crystalline solid is positive.
 (C) At absolute zero temp. the entropy of all crystalline substance is taken to be zero
 (D) At absolute zero temp. the entropy of a perfectly crystalline solid is taken to be zero.



Q9 The following data is known about the melting of a compound AB. $\Delta H = 9.2 \text{ kJ mol}^{-1}$. $\Delta S = 0.008 \text{ kJ K}^{-1} \text{ mol}^{-1}$. Its melting point is:

- (A) 736 K
- (B) 1050 K
- (C) 1150 K
- (D) 1150°C

Q10 The entropy change for the conversion of 1 mol of α -tin (at 13°C , 1 atm) to 1 mol of β -tin (13°C , 1 atm), if enthalpy of transition is $2.095 \text{ kJ mol}^{-1}$ is

- (A) $7.32 \text{ J mol}^{-1} \text{ K}^{-1}$
- (B) $14.62 \text{ J K}^{-1} \text{ mol}^{-1}$
- (C) $56.3 \text{ J mol}^{-1} \text{ K}^{-1}$
- (D) 0



Answer Key

Q1 (B)

Q2 (B)

Q3 (D)

Q4 (B)

Q5 (A)

Q6 (C)

Q7 (B)

Q8 (D)

Q9 (C)

Q10 (A)



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