Q1 JEE Main 2020 - 2 September (Morning)

The internal energy change (in J) when $90\mathrm{g}$ of water undergoes complete evaporation at $100^{\circ}\mathrm{C}$ is (Given : $\Delta \mathrm{H}_{\mathrm{vap}}$ for water at $373\mathrm{K}=41\mathrm{kJ/mol}$, $R=8.314\mathrm{JK}^{-1}\mathrm{mol}^{-1}$)

Q2 JEE Main 2020 - 2 September (Evening)

The heat of combustion of ethanol into carbon dioxide and water is -327 kcal at constant pressure. The heat evolved (in cal) at constant volume and $27^{\circ}\mathrm{C}$ (if all gases behave ideally) is $\left(R=2 \text{ cal } mol^{-1}K^{-1}\right)$

Q3 JEE Main 2020 - 5 September (Evening)

Lattice enthalpy and enthalpy of solution of NaCl are $788\mathrm{kJmol}^{-1}$ and $4\mathrm{kJmol}^{-1}$, respectively. The hydration enthalpy of NaCl is

(A) $784\mathrm{kJmol}^{-1}$
(B) $-780\mathrm{kJmol}^{-1}$
(C) $780\mathrm{kJmol}^{-1}$
(D) -784 kJ mol^{-1}

Q4 JEE Main 2020 - 7 January (Evening)

Calculate $\Delta_f H^{\circ}\left(\ln\ kJ/mol\right)$ for $C_2H_6\left(g\right)$, if $\Delta_c H^{\circ}\left[C_{(\text{graphite})}\right]=-393.5\ kJ/mol$, $\Delta cH^{\circ}\left[H_2\left(g\right)\right]=-286\ kJ/mol$ and $\Delta cH^{\circ}\left[C_2H_6\left(g\right)\right]=-1560\ kJ/mol$
Multiply your answer with (-1)

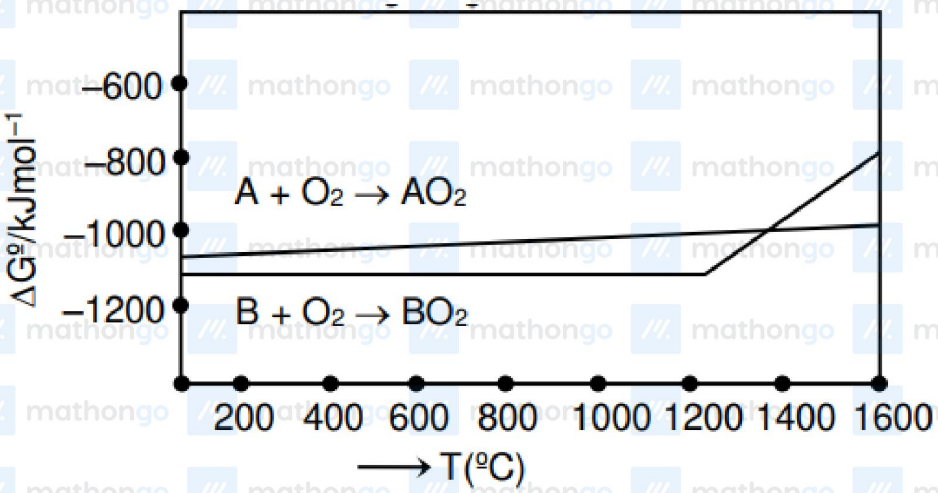
Q5 JEE Main 2020 - 9 January (Morning)

If enthalpy of atomisation for $Br_{2(I)}$ is $x\ kJ/mol$ and bond enthalpy for Br_2 is $y\ kJ/mol$ the relation between them :

(A) $x>y$
(B) $x<y$
(C) $x=y$
(D) Relation does not exist

Q6 JEE Main 2020 - 9 January (Morning)

According to the following diagram, A reduces CO_2 when the temperature is :



(A) $> 1400^{\circ}C$
(B) $< 1400^{\circ}C$
(C) $> 1200^{\circ}C$ but $< 1400^{\circ}C$
(D) $< 1200^{\circ}C$

Q7 JEE Main 2020 - 9 January (Evening)

The first and second ionisation enthalpies of a metal are 496 and $4560\ kJ\ mol^{-1}$, respectively. How many moles of HCl and H_2SO_4, respectively, will be needed to react completely with 1 mole of the metal hydroxide?

(A) 1 and 0.5
(B) 2 and 0.5
(C) 1 and 2
(D) 1 and 1

Answer Key

Q1 (189494) **Q2** (-326400) **Q3** (D) **Q4** (85)

Q5 (A) **Q6** (A) **Q7** (A)