



1. At 25°C and 1 atm pressure, the enthalpies of combustion are as given below:

Substance	H ₂	C(graphite)	C ₂ H ₆ (g)
$\frac{\Delta_c H^\ominus}{\text{kJ mol}^{-1}}$	-286.0	-394.0	-1560.0

The enthalpy of formation of ethane is

- (1) +54.0 kJ mol⁻¹ (2) -68.0 kJ mol⁻¹
 (3) -86.0 kJ mol⁻¹ (4) +97.0 kJ mol⁻¹

[JEE Main, June 2022]

2. Enthalpy of sublimation of iodine is 24 cal g^{-1} at 200°C . If specific heat of $\text{I}_2(\text{s})$ and $\text{I}_2(\text{g})$ are 0.055 and $0.031 \text{ cal g}^{-1} \text{ K}^{-1}$ respectively, then enthalpy of sublimation of iodine at 250°C in cal g^{-1} is:

[Jee Main, April 2019]

3. The standard enthalpies of formation of Al_2O_3 and CaO are $-1675 \text{ kJ mol}^{-1}$ and -635 kJ mol^{-1} respectively.

For the reaction



(Round off to the Nearest Integer)

[JEE Main, March 2021]

4. The average S-F bond energy in kJ mol^{-1} of SF_6 is ____.(Rounded off to the nearest integer)
[Given : The values of standard enthalpy of formation of $\text{SF}_6(\text{g})$, $\text{S}(\text{g})$ and $\text{F}(\text{g})$ are -1100 , 275 and 80 kJ mol^{-1} respectively.] [JEE Main, Feb 2021]

5. The ionization enthalpy of Na^+ formation from $\text{Na}_{(g)}$ is $495.8 \text{ kJ mol}^{-1}$, while the electron gain enthalpy of Br is $-325.0 \text{ kJ mol}^{-1}$. Given the lattice enthalpy of NaBr is $-728.4 \text{ kJ mol}^{-1}$. The energy for the formation of NaBr ionic solid is $(-) \text{ } \underline{\hspace{2cm}} \times 10^{-1} \text{ kJ mol}^{-1}$. **[JEE Main, Feb 2021]**

6. 200 mL of 0.2 M HCl is mixed with 300 mL of 0.1 M NaOH. The molar heat of neutralization of this reaction is -57.1 kJ . The increase in temperature in $^{\circ}\text{C}$ of the system on mixing is $x \times 10^{-2}$. The value of x is _____. (Nearest integer)

[Given : Specific heat of water = $4.18 \text{ J g}^{-1} \text{ K}^{-1}$ Density of water = 1.00 g cm^{-3}]

(Assume no volume change on mixing)

[JEE Main, August 2021]



ANSWERS KEY

1. (3) 2. (2) 3. (230) 4. (309) 5. (5576) 6. (82)

