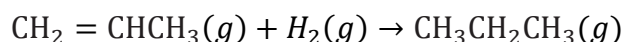


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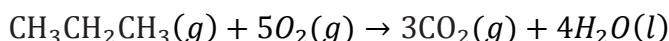
Energetics and dynamics of chemical reactions

Assignment – III

Q.1 The standard reaction enthalpy for the hydrogenation of propene,

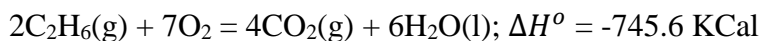
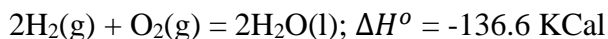
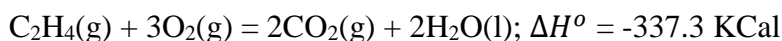


is -124 kJ mol^{-1} . The standard reaction enthalpy for the combustion of propane,



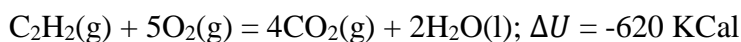
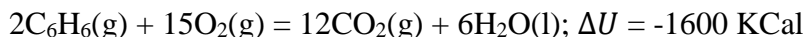
is $-2220 \text{ kJ mol}^{-1}$. Calculate the standard enthalpy of combustion of propene employing the Hess's law.

Q.2 Given the following heats of reaction at 25°C :



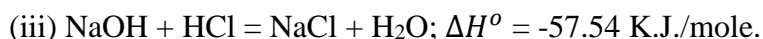
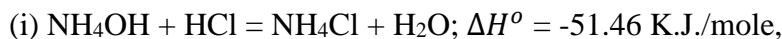
Calculate the enthalpy for the reaction; $\text{C}_2\text{H}_4(g) + \text{H}_2(g) = \text{C}_2\text{H}_6(g)$ at 25°C .

Q.3 At constant volume at 27°C ,



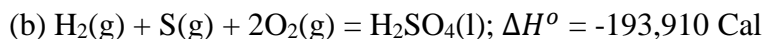
Find the heat of polymerisation of acetylene to benzene at constant pressure.

Q.4 Heat of neutralization of



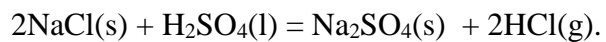
Calculate the heat of neutralization of NH_4OH and CH_3COOH .

Q.5 At 25°C the heats of the following reactions are:





Calculate the heat of reaction at constant volume at 25 °C for



Q.6 Calculate the enthalpy of formation of $\text{N}_2\text{O}_5(\text{g})$ from the following data:

