Marks 4

- Nitroglycerine, $C_3H_5(NO_3)_3$, decomposes to form N_2, O_2, CO_2 and H_2O according to the following equation.

$$4C_3H_5(NO_3)_3(l) \rightarrow 6N_2(g) + O_2(g) + 12CO_2(g) + 10H_2O(g)$$

If 15.6 kJ of energy is evolved by the decomposition of 2.50 g of nitroglycerine at 1 atm and 25 °C, calculate the enthalpy change, $\Delta H°$, for the decomposition of 1.00 mol of this compound under standard conditions.

Answer:

Hence calculate the enthalpy of formation of nitroglycerine under standard conditions.

Data:

	$\Delta_f H°$ (kJ mol^{-1})
$H_2O(g)$	–242
$CO_2(g)$	–394

Answer: