Chemistry 2.4   **Worksheet 4**   Name _____
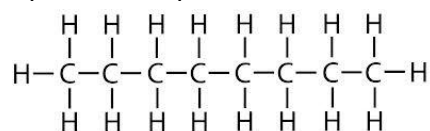
**Question One**- Complete the table, the specific heat energy is 4.18 $Jg^{-1o}C^{-1}$

Mass (g)	Change in temperature (^oC)	Energy released (J)
3.56	13.6	
45.9		180.5
	-25.6	-14.0
100		156.3
15.3	100	
	-78	-130.2

Question Two-

Octane (C_8H_{18}) is one of the main components of petrol fuel. The structure of Octane is

Octane can be fully combust in excess oxygen (O_2) forming carbon dioxide (CO_2) and water (H_2O)

$$C_8H_{18} + 12½ \ O_2 \rightarrow 8 \ CO_2 + 9 \ H_2O$$
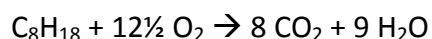
Using the bond energy provided below, calculate the enthalpy of the above reaction

C-C 346 $kJmol^{-1}$ O=O 494 $kJmol^{-1}$ C-H 414 $kJmol^{-1}$ O-H 464 $kJmol^{-1}$ C=O 724 $kJmol^{-1}$