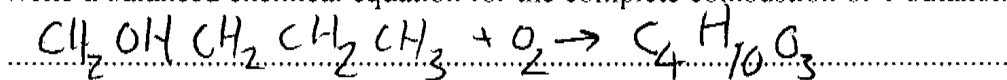


Question 23 (3 marks)

- (a) Write a balanced chemical equation for the complete combustion of 1-butanol. 1



- (b) A student measured the heat of combustion of three different fuels. The results are shown in the table. 2

Fuel	Heat of combustion (kJ g ⁻¹)
A	-48
B	-38
C	-28

The published value for the heat of combustion of 1-butanol is 2676 kJ mol⁻¹.

Which fuel from the table is likely to be 1-butanol? Justify your answer.

$\text{C}_4\text{H}_{10}\text{O}$
 $48 + 10 + 16$
 $= 64$ B
 ~~$\frac{2676}{84} = 31.86$~~