**3.** (a) (i) **Enthalpy/heat change** for formation of **1 mole** of a  
compound **(1)**  
from its **elements (1)**  
in their **standard states** / or stated temperature of 298K  
(25C) and 1 atm (or suitable unit) **(1)** 3

(ii) = -60.4  (52.336.2) **(1)**  
= -76.5 (Kj mol**1) (1)** 2

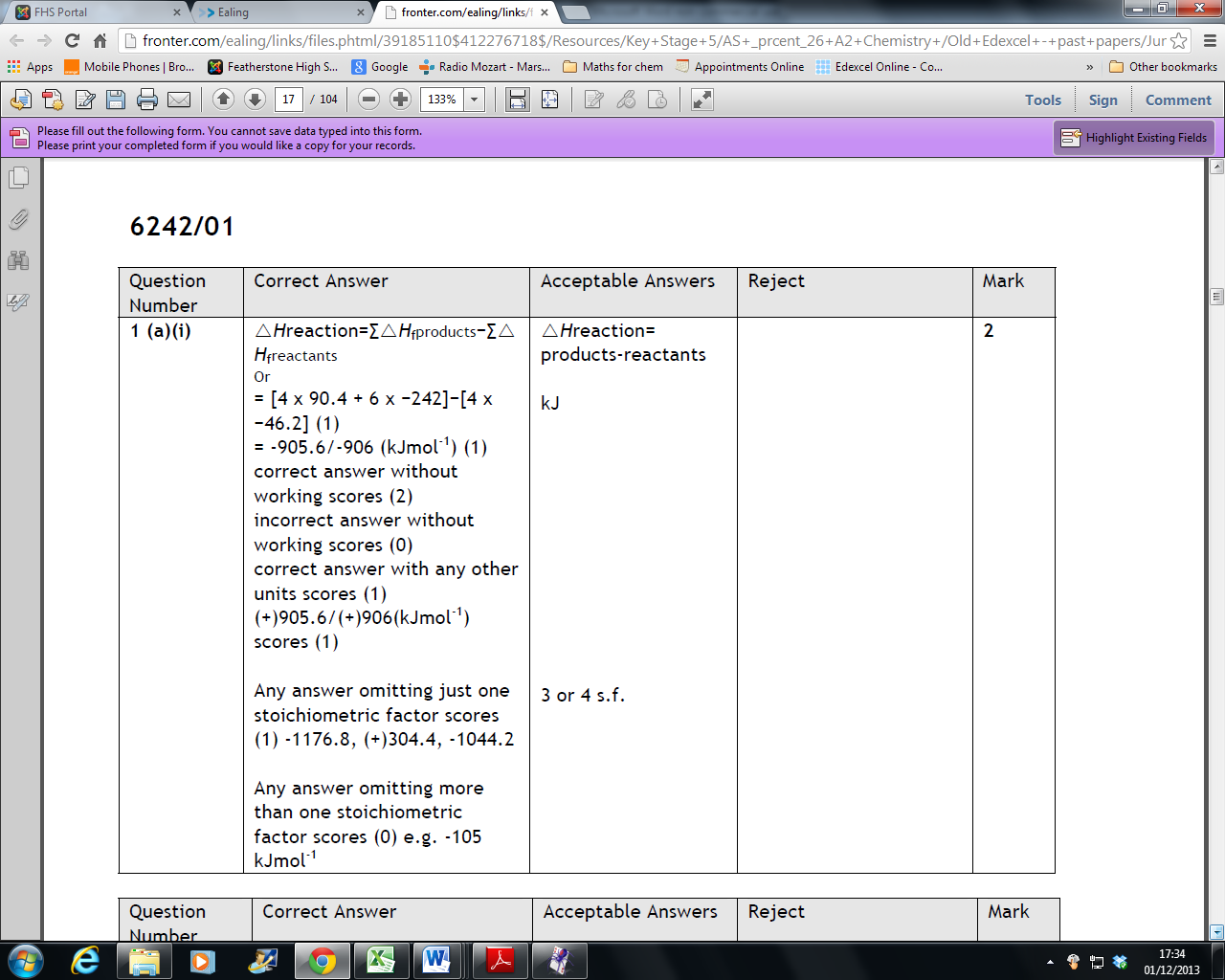
(iii) negative sign means reaction exothermic/gives out heat **(1)**  
if no answer given to part (ii) must give general explanation  
that negative means exothermic and positive means  
endothermic reaction 1

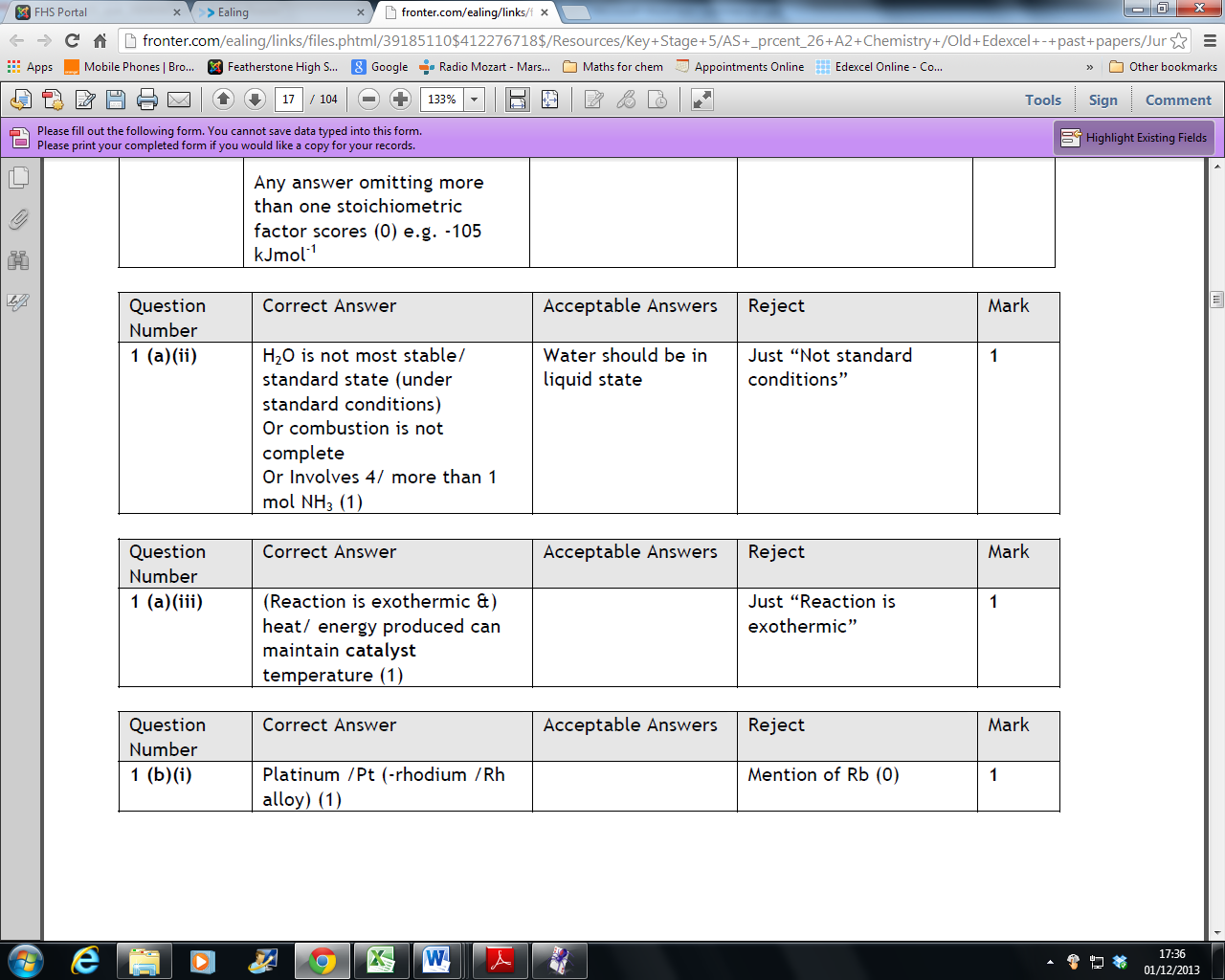
(b) Energy in = (612 + 366) = 978 **(1)**  
Energy out = 348 + 412 + 276 = 1036 **(1)**  
Energy change = 978 – 1036 = -58 **(1)** consequential  
*If candidates choose to include the four C-H bonds the above  
figures are 2626, 2684 and -58* 3

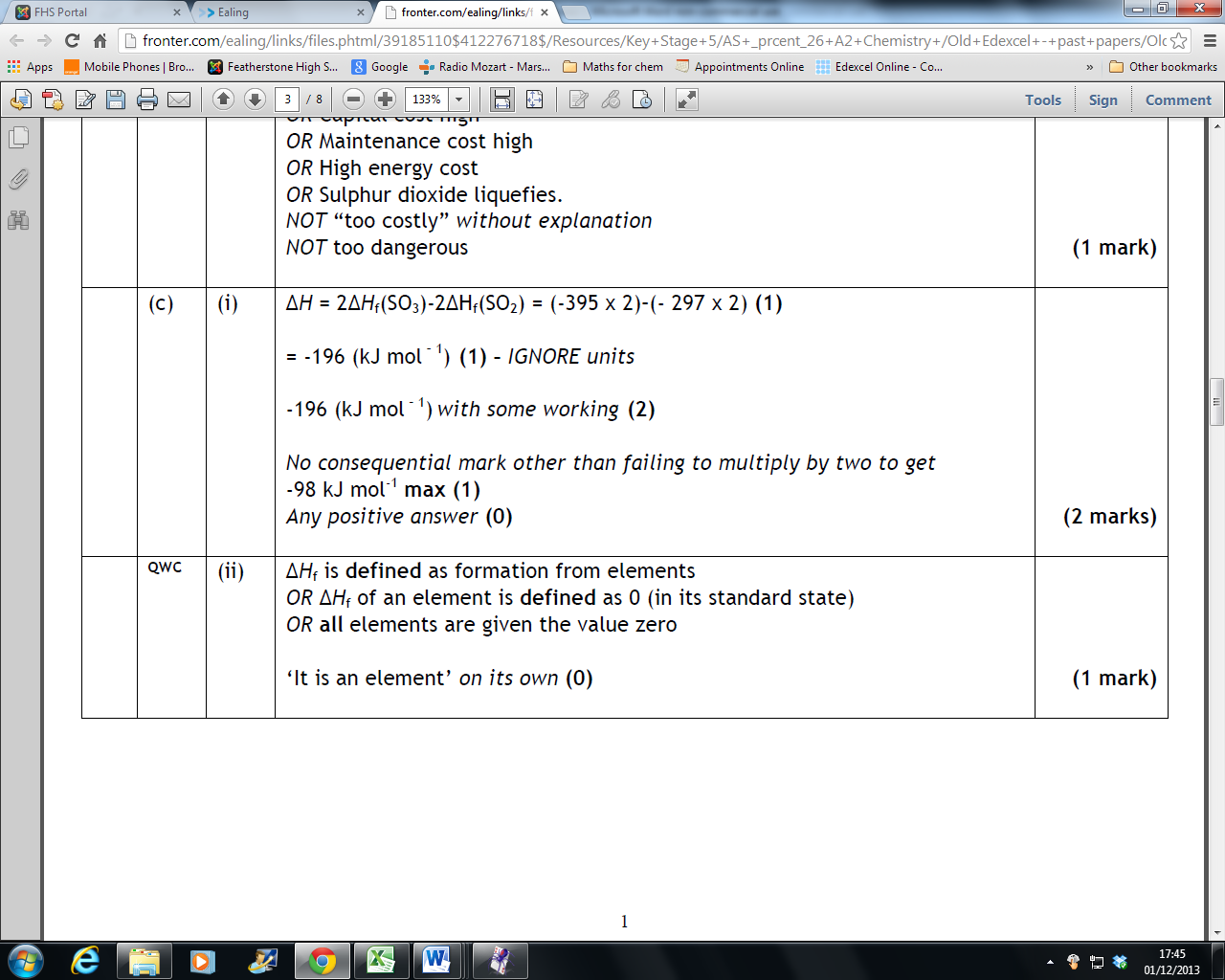
(c) **Average** values from many compounds used in bond  
enthalpies **(1)**  
**Actual values** for these compounds probably slightly different  
/ or, calculation in (a) (ii) uses real / actual / experimental  
/standard/ values **(1)**  
*n.b. do not accept arguments based on error* 2

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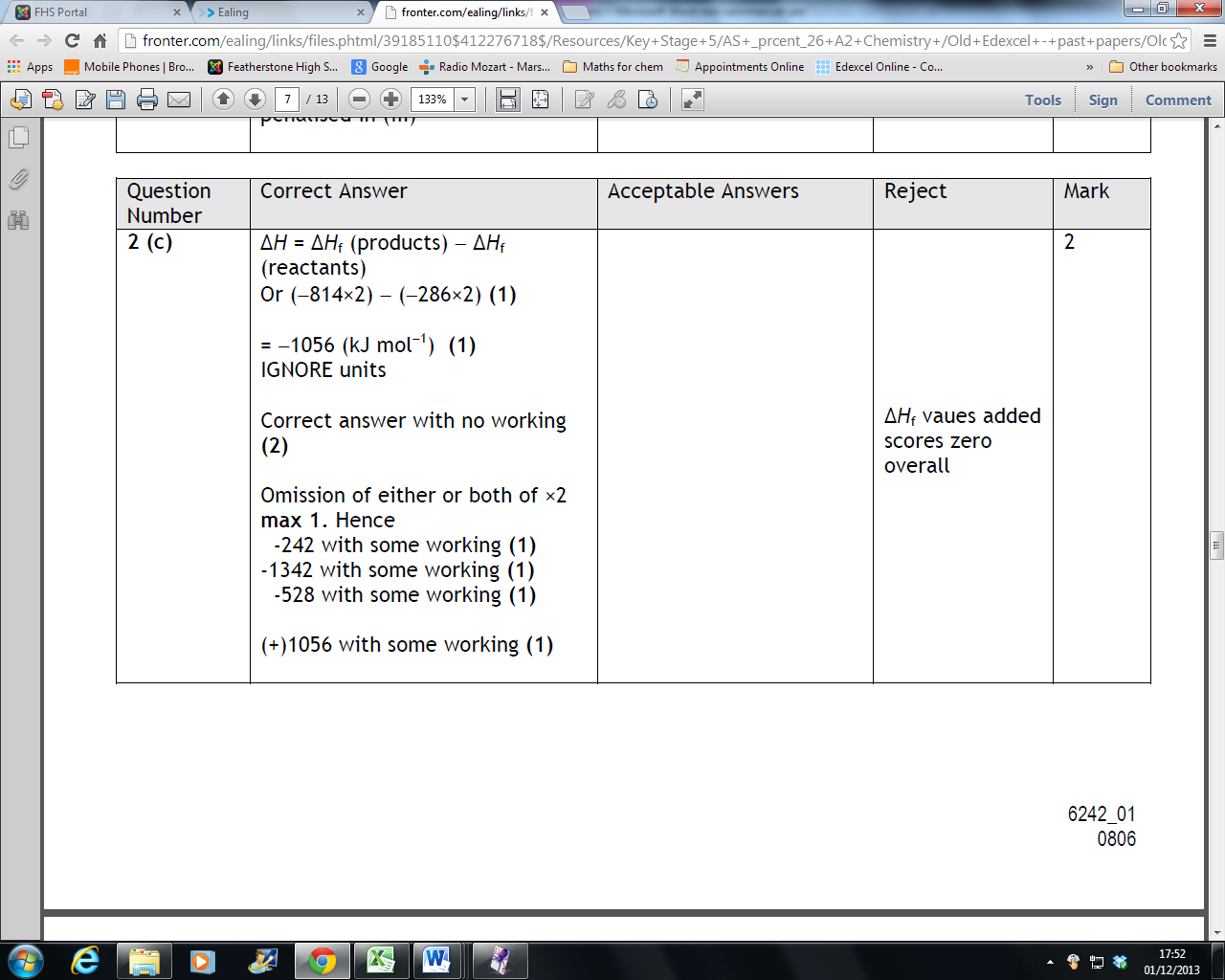






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Old edexcel Unit Test 2 June 2008



Old edexcel June 2006 Unit Test 2

