

Question number	Answer	Additional guidance	Marks
<b>2(a)</b>	D		<b>1</b>
<b>2(b)</b>	B		<b>1</b>
<b>2(c)</b>	D		<b>1</b>
<b>2(d)</b>	<ul style="list-style-type: none"> <li>order: GZ &gt; DX &gt; EY (1)</li> </ul> Justification: <ul style="list-style-type: none"> <li>the ions in GZ have higher charges (than those in both EY and DX) (1)</li> <li>the ions in DX are smaller than those in EY (1)</li> </ul>		<b>3</b>
<b>2(e)</b>	<ul style="list-style-type: none"> <li>construction of balanced cycle (1)</li> <li>substitution and evaluation of 2<sup>nd</sup> IE (1)</li> </ul>	<u>Example calculation</u> $- 2258 = -590 - 2^{\text{nd}} \text{ IE} + 2 (349) - 178 - 2 (122) - 796$ hence 2 <sup>nd</sup> IE = (+) 1148 ( kJ mol <sup>-1</sup> ) correct answer, no working scores 2 marks	<b>2</b>

**(Total for Question 2 = 8 marks)**