Practice Question Set For A-Level
**Subject : Chemistry**
**Paper-1 Topic: Physical 1_Thermodynamics**

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**Name of the Student**:_____
**Max. Marks : 15 Marks** **Time : 15 Minutes**

Mark Schemes

Q1.

B

**[1]**

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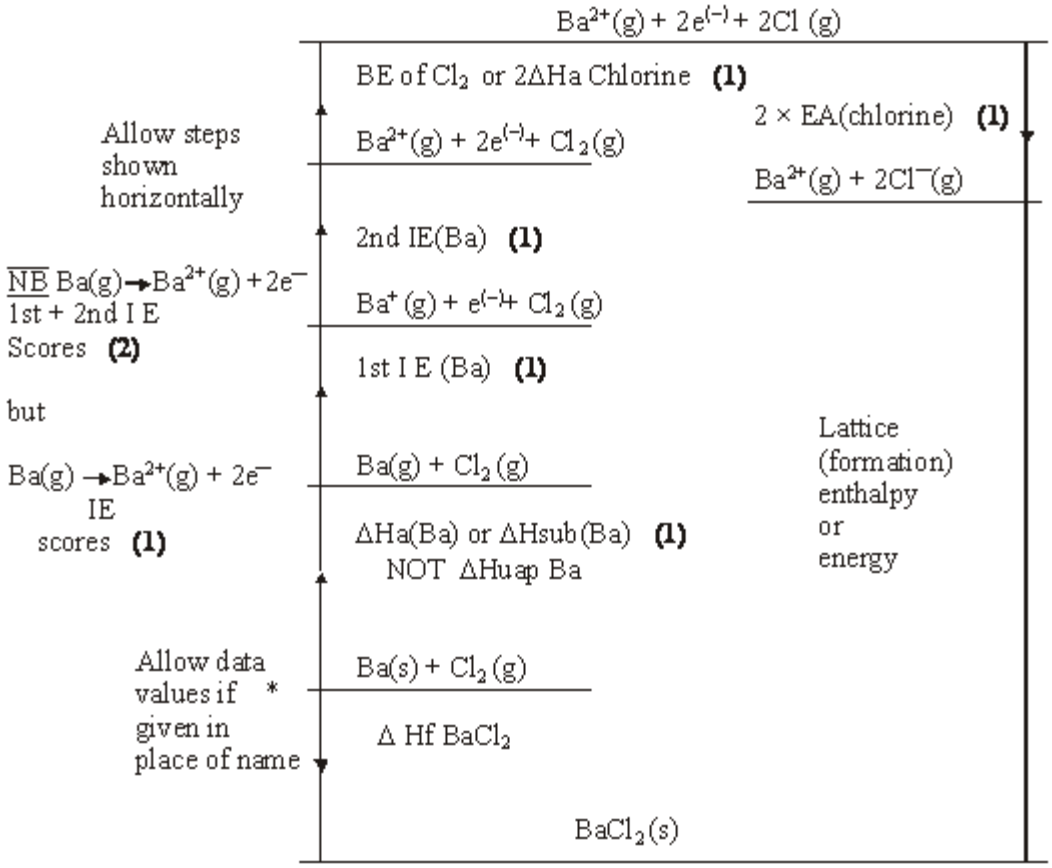
Q2.

(a) (i)




*ONLY consider species involved in the step marked*

(ii) Cycling clockwise about (*)

*CE if step missing*

$\Delta H_a Ba + 1^{st}$ IEBa + $2^{nd}$ IE Ba + $2\Delta H_a Cl$ + 2EACl + LE – $\Delta H_f BaCl_2 = 0$ **(1)**
+180 + 503 + 965 + 2 × 122 + 2EA –2056 + 859 = 0 **(1)**
EA = –695/2 = – (347 to 348) **(1)**

*Ignore units*

*Calculation –1 for each error*

*Mark conseq.*

*Notes: –695 scores **(2)***
*+(347 to 348) scores **(2)***
*–(286 to 287) scores **(2)***
*+(286 to 287) scores **(1)***
*–573 scores **(1)***
*+573 scores **(0)***

**9**

(b) $\Delta S = \Sigma S$ products – $\Sigma S$ reactants
= (63 +223) – 124 = 162 **(1)**

$\Delta G = \Delta H - T\Delta S$ or $\Delta H = T\Delta S$ or $T = \Delta H/\Delta S$ **(1)**

*or used correctly*

$\Delta H = 859 \times 10^3$ **(1)** = T × 162
T = (5 300 to 5304) K **(1)**

*Penalise if units °C*

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*–1 for each error + mark conseq.*

**4**

**[13]**

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Q3.

C

**[1]**

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