

Cambridge Chemistry Challenge Lower 6th

June 2011

Student Answer Booklet

Student name _____

male female

Email _____

School _____

School year (eg year 12) _____

Subjects taken for AS _____

	p2	p3	p4	p5	p6	p7	p8	Total
mark	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

1(a)

name of isomer	class of compound
<hr/>	
name of isomer	class of compound

(b)

Structure of A	Structure of F
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(c)

Structure of B	Structure of G
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(d)(i) Equation for combustion:

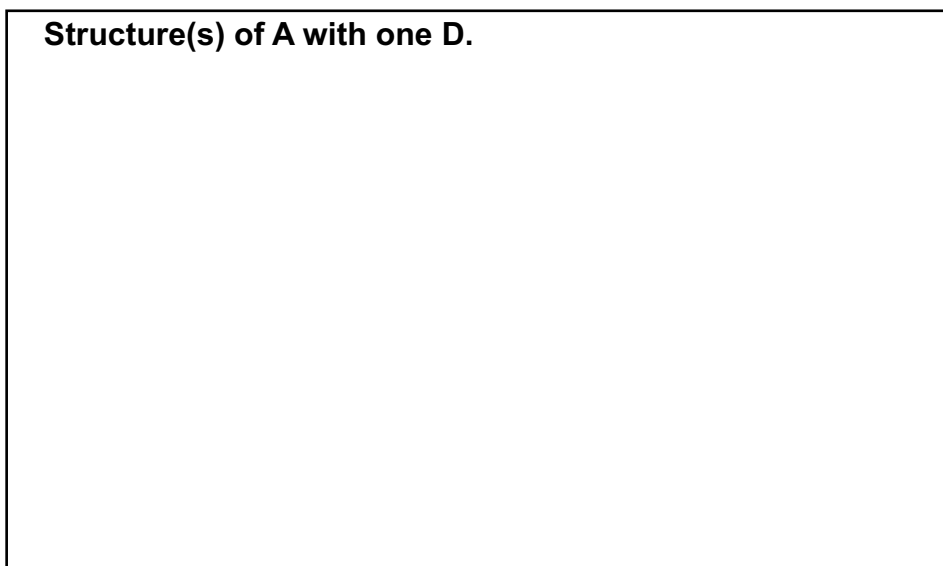
(ii) Standard enthalpy of formation of A:

(d) (iii) Standard enthalpy of formation of B:

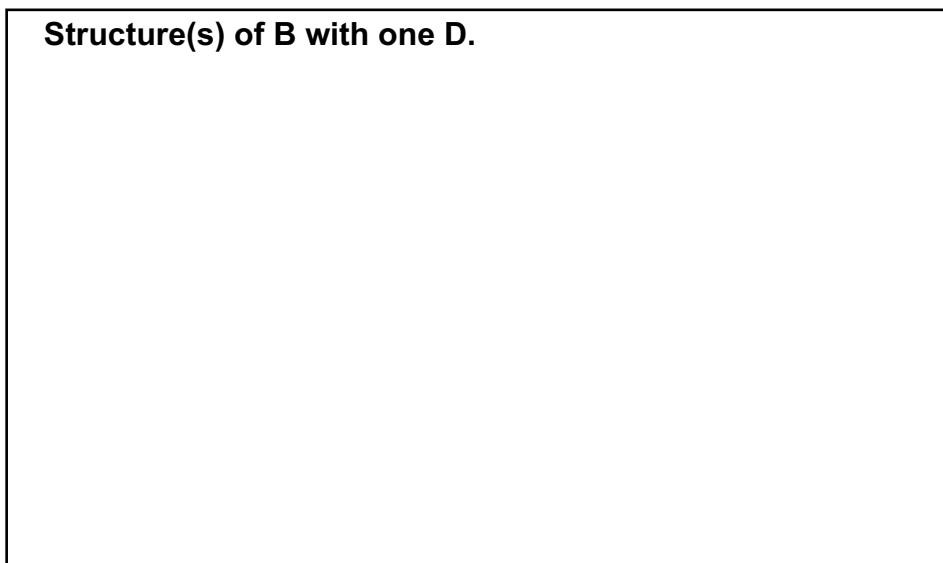
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(e) Standard enthalpy change for reaction $B \rightarrow A$:

(f) (i) Structure(s) of A with one D.



(ii) Structure(s) of B with one D.



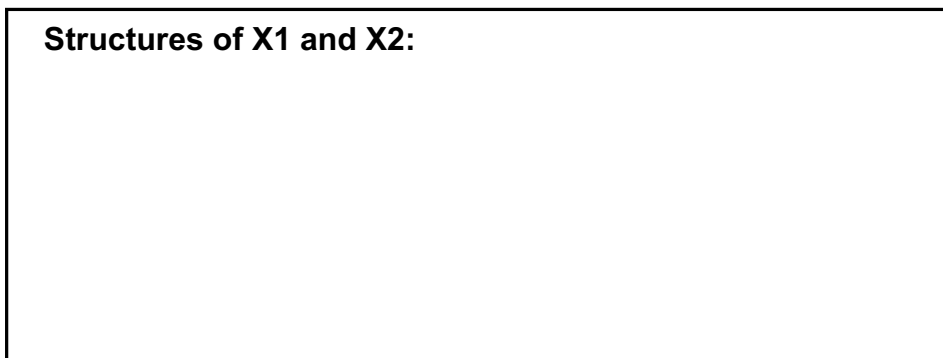
(g)

Structure of A1:



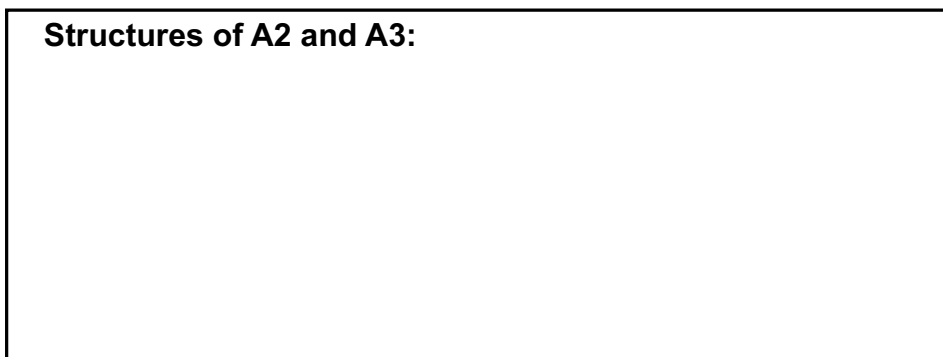
(h)

Structures of X1 and X2:



(i)

Structures of A2 and A3:



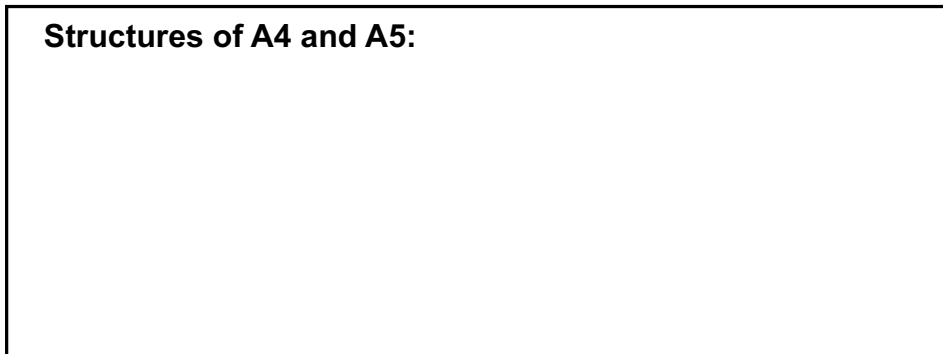
(j) (i)

Structure of Y:



(ii)

Structures of A4 and A5:



leave
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(k)

Structure of A6:	Structure of Z:
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(l)

Structure of A7:

(m)

	NO plane of symmetry	Plane of symmetry
NO rotational symmetry	Structure(s)	Structure(s)
Rotational symmetry	Structure(s)	Structure(s)

2(a) (i) oxidation state (ii) shape:

(b)(i) Formula for W

(ii) Formula for X shape:

(iii) Equation for formation of W and X

(c)(i) Formula for Y Formula for Z
Equation for formation of Y and Z

(ii) Equation for combustion of Z:

(d) Equation for decomposition of Z

(e)(i)

calculate n

(ii)

number of atoms in sphere

(iii)

Expression for Avogadro constant

(f)

Si–Si bond length

(g)

A_r for silicon

(h)

Calculated value for Avogadro constant