

**57th INTERNATIONAL
CHEMISTRY OLYMPIAD
2025
UK Round One
STUDENT ANSWER BOOKLET**

In order to print your certificate, we need to store your name, school, and mark in a database: these details are only viewable by your school and the RSC Chemistry Olympiad Working Group.

Your participation in the competition indicates that you are happy for us to do this.

Please PRINT details clearly:

Name

Nationality

Date of birth

School Year (e.g., Year 12, Scottish Higher)

Date paper taken

School use:

Centre number

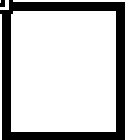
Question	1	2	3	4	5	6	Total
Marks Available	8	9	20	12	19	15	83
Marks Scored							

1.	This question is about clay pigeon shooting	Mark
(a)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
(b)		<input type="checkbox"/>
(c)		<input type="checkbox"/>
(d)		<input type="checkbox"/>
(e)		<input type="checkbox"/>
(f)		<input type="checkbox"/>

(g)



Total out of 8




2.	This question is about BrAt	Mark		
(a)		<input type="checkbox"/>		
(b)		<input type="checkbox"/>		
(c)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">B</td> <td style="width: 50%; text-align: center;">C</td> </tr> </table>	B	C	<input type="checkbox"/>
B	C			
(d)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">x</td> <td style="width: 50%; text-align: center;">y</td> </tr> </table>	x	y	<input type="checkbox"/>
x	y			
(e)		<input type="checkbox"/>		
(f)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">D</td> <td style="width: 50%; text-align: center;">E</td> </tr> </table>	D	E	<input type="checkbox"/> <input type="checkbox"/>
D	E			
(g)		<input type="checkbox"/> <input type="checkbox"/>		
<i>Total out of 9</i>		<input type="checkbox"/>		

3. This question is about epoxides

Mark

(a)

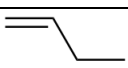
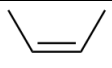
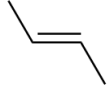

(b)

	60°	90°	104.5°	107°	109.5°	120°	180°
<chem>C2H5OC2H5</chem>							
							

(c)

(d)

(e)

<chem>C4H8</chem> isomer	1	2	3	4
				
				
				
				

(f)	B	C	
	D		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(g)	[E⁻]	F	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(h)	G	H	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	I		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

(i)

J

K

Total out of 20

4.	This question is about Raman spectroscopy	Mark
(a)		<input type="checkbox"/>
(b)		<input type="checkbox"/>
(c)	A	<input type="checkbox"/>
(d)	Repeat unit of B	<input type="checkbox"/>

(e)

(i)



(ii)



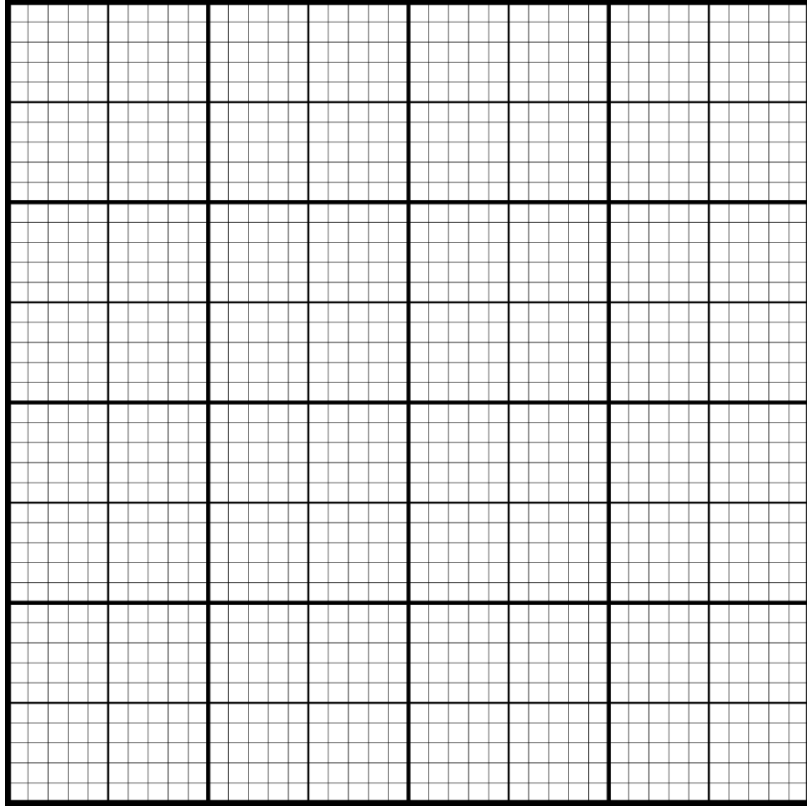
(f)

	C≡C stretch	conjugated C=C stretch	C-H stretch	C-C stretch	O-H stretch
Line 1					
Line 2					



(g)

(i)



Use of graph paper is optional.



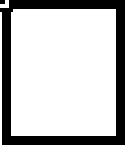
(ii)



(iii)



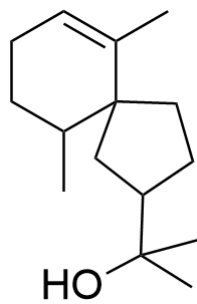
Total out of 12



5. This question is about agarwood

Mark

(a)



(b)

A

B



C

[D]



(c)

E



[F]



G



(d)

H

I

J

K

[L*]

M

Total out of 19

6. This question is about the iodination of ketones

Mark

(a)

A	B	C	I ₂	HI

(b)

(i)

(ii)

(c)

(d)

(e)



(f)

Statement	C	E
Product whose reaction pathway has a larger rate constant for the first step		
Is the major product at high $[I_2]$		
Product whose reaction pathway has a larger K_{eq}		
Is the major product a low $[I_2]$		



(g)



Total out of 15

