



**51st INTERNATIONAL
CHEMISTRY OLYMPIAD
2019
UK Round One
STUDENT ANSWER BOOK**

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)

School use:

Centre number

Date paper taken

Question	1	2	3	4	5	Total
Marks available	11	18	11	27	13	80
Marks scored						

1.	This question is about carbon dioxide	Mark
(a)	(i)	<input type="checkbox"/> <input type="checkbox"/>
	(ii)	<input type="checkbox"/>
(b)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
	(iii)	<input type="checkbox"/>

(iv)

- high pressure and low temperature
- high pressure and high temperature
- low pressure and low temperature
- low pressure and high temperature

(c)

(d)

(e)

Total out of 11

2.	This question is about the industrial separation of precious metals	Mark	
(a)	(i)	<input type="checkbox"/>	
	(ii)	<input type="checkbox"/>	
	(iii)	<input type="checkbox"/>	
(b)	(i)	<input type="checkbox"/>	
	(ii)	<input type="checkbox"/>	
(c)			
	<i>m/z</i>	<i>Relative intensity</i>	
			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(d)		<input type="checkbox"/>	
(e)		<input type="checkbox"/>	

(f)		<input type="checkbox"/> <input type="checkbox"/>
(g)		<input type="checkbox"/>
(h)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
	(iii)	<input type="checkbox"/>
(i)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
<i>Total out of 18</i>		<input type="checkbox"/>

3.	This question is about treating nerve agent poisoning	Mark
(a)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
(b)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>
(c)		<input type="checkbox"/>
(d)	(i)	<input type="checkbox"/>
	(ii)	<input type="checkbox"/>

(e)

(f)

(g)

Intermediate X

Reactivator Y

Total out of 11

(e)

E

F

G

H



(f)

I

J



(g)	K	<input type="checkbox"/> <input type="checkbox"/>
(h)	L M	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(i)	Intermediate V- Intermediate W- Y	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(j)	Reagent X Chain carrying radical Z-	<input type="checkbox"/> <input type="checkbox"/>
	<i>Total out of 27</i>	<input type="checkbox"/>

5.	This question is about a biodegradable plastic	Mark
(a)		<input type="checkbox"/> <input type="checkbox"/>
(b)	<input type="checkbox"/> addition <input type="checkbox"/> condensation <input type="checkbox"/> neutralisation <input type="checkbox"/> oxidation <input type="checkbox"/> reduction	<input type="checkbox"/>
(c)	Compound A	<input type="checkbox"/>
(d)		<input type="checkbox"/>
(e)		<input type="checkbox"/> <input type="checkbox"/>
(f)		<input type="checkbox"/>

(g)

(h) structure of Compound **B**

(i)

Total out of 13