

Please read the instructions printed at the end of this form. **One** of these sheets, suitably completed, should be attached to the assessed work of **each** candidate.

Unit Title	12 Electrons in Action	Unit Code	G631	Session	Jan / June	Year	2	0	0
Centre Name					Centre Number				
Candidate Name					Candidate Number				

Evidence of your investigation into the principles and applications of electrochemical changes

Criteria			Teacher Comment	Page No.		
<p>AO1(a).1: You will investigate redox equilibria and demonstrate a basic knowledge and understanding of the principles underlying at least two of the applications of electrochemical changes, including correct scientific terminology and conventions;</p> <p style="text-align: right;">[0 1]</p>	<p>AO1(a).2: You will investigate redox equilibria and demonstrate a sound knowledge and understanding of the principles underlying the full range of applications of electrochemical changes identified in this unit; you will give clear explanations and will use appropriate scientific terms and conventions accurately;</p> <p style="text-align: right;">[2 3]</p>	<p>AO1(a).3: You will investigate redox equilibria and demonstrate a thorough knowledge and understanding of the principles underlying the full range of applications of electrochemical changes identified in this unit; you will give clear explanations and will use appropriate scientific terms and conventions accurately throughout.</p> <p style="text-align: right;">[4 5]</p>	<table border="1"> <tr><td>Mark</td></tr> <tr><td> </td></tr> </table>	Mark		
Mark						
<p>AO1(b).1: You will demonstrate research into the production of electricity and metals, using some appropriate examples, selecting information and presenting it clearly;</p> <p style="text-align: right;">[0 1]</p>	<p>AO1(b).2: You will demonstrate research into the production of electricity and metals, using a range of examples, selecting and interpreting information and presenting it clearly;</p> <p style="text-align: right;">[2 3]</p>	<p>AO1(b).3: You will demonstrate research into the production of electricity and metals, using the full range of examples given, selecting and interpreting information and presenting it clearly.</p> <p style="text-align: right;">[4 5]</p>	<table border="1"> <tr><td>Mark</td></tr> <tr><td> </td></tr> </table>	Mark		
Mark						
<p>AO2(a).1: You will describe at least one example of each of two types of commercial cells, make some comparisons and give a limited interpretation of information;</p> <p style="text-align: right;">[0 1 2 3 4]</p>	<p>AO2(a).2: You will describe three different commercial cells, make comparisons, give a good explanation and interpretation of information;</p> <p style="text-align: right;">[5 6]</p>	<p>AO2(a).3: You will describe a wide range of cells, make all comparisons, give a full explanation and interpretation of information.</p> <p style="text-align: right;">[7 8]</p>	<table border="1"> <tr><td>Mark</td></tr> <tr><td> </td></tr> </table>	Mark		
Mark						
<p>AO2(b).1: You will carry out some straightforward calculations of EMF of cells and quantity of charge; you will obtain and use data to compare the efficiency of commercial cells;</p> <p style="text-align: right;">[0 1 2]</p>	<p>AO2(b).2: You will carry out calculations of EMF of cells, quantities of charge and mass of products; you will obtain and use data to compare the efficiency of commercial cells and obtain correct solutions;</p> <p style="text-align: right;">[3 4]</p>	<p>AO2(b).3: You will carry out complex calculations of EMF of cells, quantities of charge and mass of products; you will obtain and use data to compare the efficiency of commercial cells and obtain correct solutions to the appropriate degree of accuracy.</p> <p style="text-align: right;">[5 6]</p>	<table border="1"> <tr><td>Mark</td></tr> <tr><td> </td></tr> </table>	Mark		
Mark						

Criteria					Teacher Comment	Page No.
AO3(a).1: Using risk assessments, you will carry out measurements of EMF of cells and mass of copper plate; you will change at least one of the conditions of each experiment to obtain two sets of results for measurement of EMF and two sets of results for the measurement of copper plate; <p style="text-align: right;">[0 1 2 3 4]</p>	AO3(a).2: You will produce risk assessments, consistent with COSHH guidelines; you will carry out measurements of EMF of cells and mass of copper plate; you will change conditions to obtain more than two sets of results for measurement of EMF and more than two sets of results for the measurement of copper plate; you will work with an appropriate degree of accuracy; <p style="text-align: right;">[5 6]</p>	AO3(a).3: You will produce your own detailed risk assessments, consistent with COSHH guidelines; you will carry out a wide range of measurements of EMF of cells and mass of copper plate; you will consider and change a range of conditions to obtain corresponding sets of results for measurement of EMF and for the measurement of copper plate – at least one set of results show no effect; you will explain any practical techniques that will improve results; you will work with an appropriate degree of accuracy. <p style="text-align: right;">[7 8]</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Mark</div>			
						Total/50
AO3(b).1: You will make and record relevant observations and measurements from the above experiments; you will display the data appropriately, with help; <p style="text-align: right;">[0 1 2 3]</p>	AO3(b).2: You will make and record relevant observations and measurements from the above experiments, using precision in your measurements; you will display the data obtained accurately in a range of ways; <p style="text-align: right;">[4 5 6]</p>	AO3(b).3: You will make and record relevant observations and measurements from the above experiments, using precision in your measurements; you will display the data obtained accurately in a range of ways. <p style="text-align: right;">[7 8 9]</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Mark</div>			
						Total/50
AO3(c).1: You will give some interpretation of the results; you will evaluate your procedures; <p style="text-align: right;">[0 1 2 3]</p>	AO3(c).2: You will interpret the results and draw basic conclusions; you will evaluate your procedures; <p style="text-align: right;">[4 5 6]</p>	AO3(c).3: You will interpret the results in detail and draw conclusions; you will evaluate your procedures and suggest alternatives. <p style="text-align: right;">[7 8 9]</p>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Mark</div>			
						Total/50
Total/50						
If this work is a re-sit, please tick		Session and Year of previous submission	Jan / June	2	0	0
					Please tick to indicate this work has been standardised internally	

Please note: This form may be updated on an annual basis. The current version of this form will be available on the OCR website (www.ocr.org.uk).
A completed Centre Authentication form CCS160 **must** accompany the MS1 when it is sent to the moderator.

Guidance on Completion of this Form

- 1 **One** sheet should be used for each candidate.
- 2 Please ensure that the appropriate boxes at the top of the form are completed.
- 3 Please enter *specific* page numbers where evidence can be found in the portfolio, and where possible, indicate to which part of the text in the mark band the evidence relates.
- 4 Circle the mark awarded for each strand of the marking criteria in the appropriate box and also enter the circled mark in the final column.
- 5 Add the marks for the strands together to give a total out of 50. Enter this total in the relevant box.