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| Description: Vertical full colour positive | Safety Bay Senior High School | | | | |
| **CHEMISTRY UNIT 3 & 4** | | | | | |
| **Extended Response # 2:** | | | | | |
| **Fuel cells & Scientific models of acids& bases** | | | | | |
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| **NAME:** | | |  | | |
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| **Time allowed for this paper** | | | | | |
| Planning time: | | 10 minutes *Use spare paper provided* | | | |
| Working time: | | 50 minutes | | | |
|  | | | | | |
| **Structure of this paper:** | | | | | |
| Section | | | Number of questions | Marks available | Marks achieved |
| Written response | | | 2 | 40 | \_\_\_\_\_\_ |

In this extended response you need to write answers to the following **two questions** (see full text below).

**Question 1:**

Changing levels of carbon dioxide in the atmosphere are having a significant impact on the health of marine organisms and ecosystems, such as coral reefs. This has led to national and international action to reduce carbon dioxide emissions.

In your extended response you should:

* Describe the role of human activity on CO2 emissions
* Explain the link between CO2 emissions and ocean acidification
* Describe and explain the effects of ocean acidification on marine organisms
* Describe the actions taken by Australian and international governments to reduce future CO2 emissions

Provide evidence to substantiate your answer where possible. Evidence may take the form of statistics or findings from particular scientific studies.

(20 marks)

**Question 2:**

Electrowinning, electrorefining and electroplating are three industrial applications of electrolysis.

Describe how these processes are used in industry, and explain how these processes can be understood using concepts of oxidation and reduction.

(20 marks)

Your answer should be approximately 2 -3 pages in length. Your answer should take the form of a structured written response. In addition to content, marks will be awarded for structure and clarity. Include chemical equations, diagrams and tables where appropriate.