**5.10 CLASS WORKSHEET – GALVANIC CELLS**

**Part 1 (this will be assessed as classwork)**

1. [**Watch this video**](https://www.youtube.com/watch?v=7b34XYgADlM&t=821s) **up to 14:35**
2. **Answer the following questions about the Daniell cell**

**You can either use the video to answer the questions, or the helpsheet for Lesson 5, or both**

|  |  |  |
| --- | --- | --- |
| (a) | What is a Galvanic cell? |  |
| (b) | What is another word for a Galvanic cell? |  |
| (c) | What happens when a wire is added to connect the two pieces of metal in the cell? |  |
| (d) | What happens to the Zn atoms during the reaction? |  |
| (e) | What happens to the Cu2+ ions during the reaction? |  |
| (f) | In which direction do the electrons move through the wire? |  |
| (g) | Over time, what happens to the piece of copper? |  |
| (h) | Over time, what happens to the piece of zinc? |  |
| (i) | Write a half-equation to show what happens to the Zn. Is this oxidation or reduction? |  |
| (j) | Write a half-equation to show what happens to the Cu. Is this oxidation or reduction? |  |
| (k) | Write an overall equation for the reaction. |  |
| (l) | What is the “cathode” in this cell? |  |
| (m) | What is the “anode” in this cell? |  |

**Part 2 (this will be assessed as homework)**

We study the Daniell cell because it is the easiest cell to understand.

In practice, however, it is not very useful and most modern batteries use different chemical reactions.

1. **Use the helpsheet to answer the following general questions about batteries:**

|  |  |  |
| --- | --- | --- |
| (a) | When a battery is being re-charged, which chemical reaction takes place? |  |
| (b) | Why you you think some batteries are non-rechargeable? |  |
| (c) | Which type of chemical reaction forms the basis for all batteries? |  |

1. **Complete the following table to answer questions about common batteries:**

|  |  |  |  |
| --- | --- | --- | --- |
| Use | Name of battery type | advantage | disadvantage |
| cars |  |  |  |
| flashlights |  |  |  |
| cellphones |  |  |  |