**5.6 CLASS WORKSHEET – INTRODUCTION TO OXIDATION AND REDUCTION**

**Questions 1 – 3 will be assessed as Classwork (10 points)**

1. Using the video, explain the meaning of the following terms:

|  |  |
| --- | --- |
| OXIDATION |  |
| REDUCTION |  |
| REDOX REACTION |  |

1. Consider the following reaction: Na + Cl 🡪 NaCl

Use the video to answer these questions:

|  |  |
| --- | --- |
| What is happening to the Na in this reaction? |  |
| Explain your answer |  |
| Write a half-equation to show what is happening to the Na |  |

|  |  |
| --- | --- |
| What is happening to the Cl in this reaction? |  |
| Explain your answer |  |
| Write a half-equation to show what is happening to the Cl |  |

1. Consider the following reaction: Mg + O 🡪 MgO

Answer these questions (the half-equations are already done – see below)

|  |  |
| --- | --- |
| What is happening to the Mg in this reaction? |  |
| Explain your answer |  |
| Write a half-equation to show what is happening to the Mg | Mg 🡪 Mg2+ + 2e- |

|  |  |
| --- | --- |
| What is happening to the O in this reaction? |  |
| Explain your answer |  |
| Write a half-equation to show what is happening to the Cl | O + 2e- 🡪 O2- |

**Questions 4 – 5 will be assessed as Homework (10 points)**

Here are some other examples of oxidation and reduction half equations:

|  |  |  |  |
| --- | --- | --- | --- |
| Examples of oxidation | | Examples of reduction | |
| Li 🡪 Li+ + e- | Li loses one electron | Br + e- 🡪 Br- | Br gains one electron |
| I- 🡪 I + e- | I- loses one electron | Mg2+ + 2e- 🡪 Mg | Mg2+ gains two electrons |
| Tl+ 🡪 Tl3+ + 2e- | Tl loses two electrons | Fe3+ + e- 🡪 Fe2+ | Fe3+ gains one electron |

1. Now consider what happens in these other situations. The first situation has been done for you:
2. Ag+ turns into Ag

|  |  |
| --- | --- |
| Is Ag+ being oxidised or reduced? | Reduced |
| Explain your answer | It gains one electron |
| Write a half-equation for the conversion of Ag+ to Ag | Ag+ + e- 🡪 Ag |

1. Fe2+ turns into Fe3+

|  |  |
| --- | --- |
| Is Fe2+ being oxidised or reduced? |  |
| Explain your answer |  |
| Write a half-equation for the conversion of Fe2+ to Fe3+ |  |

1. Sn4+ turns into Sn2+

|  |  |
| --- | --- |
| Is Sn2+ being oxidised or reduced? |  |
| Explain your answer |  |
| Write a half-equation for the conversion of Sn4+ to Sn2+ |  |

1. Al turns into Al3+

|  |  |
| --- | --- |
| Is Al being oxidised or reduced? |  |
| Explain your answer |  |
| Write a half-equation for the conversion of Al to Al3+ |  |

**Extra Credit Question**

1. Consider the reaction: Mg + 2H+ 🡪 Mg2+ + H2

|  |  |
| --- | --- |
| Which atom is being oxidised? |  |
| Explain your answer |  |
| Which atom is being reduced? |  |
| Explain your answer |  |
| Write a half-equation for the oxidation process |  |
| Write a half-equation for the reduction process |  |