**HW 5.4A – DISPLACEMENT REACTIONS AND THE REACTIVITY SERIES**

1. **Net ionic equations**

Write the **net ionic equations** for reactions 1a, 1b, 1d, 1e and 1g in the space below:

|  |  |
| --- | --- |
| Reaction | Net Ionic Equation |
| 1a | Cu2+ + Zn 🡪 Zn2+ + Cu |
| 1b |  |
| 1d |  |
| 1e |  |
| 1g |  |

1. **Extraction of Metals**

Answer the following questions:

|  |  |  |
| --- | --- | --- |
|  | Question | Answer |
| (a) | Identify three metals which cannot be produced by heating their oxides with carbon: |  |
| (b) | Identify three metals which can be produced by heating their oxides with either hydrogen or carbon: |  |
| (c) | Identify three metals which can be produced by heating their oxides with carbon but not by heating their oxides with hydrogen: |  |

1. **Behaviour of aluminium**

Aluminium is above zinc in the reactivity series, but when granules of aluminium and zinc are added separately to hydrochloric acid, the zinc produces a steady stream of bubbles and gradually dissolves, but the aluminium does nothing visible. Why is this?

|  |  |
| --- | --- |
| Answer |  |

**Extra Credit Questions**

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|  | Question | Answer |
| (a) | How is aluminium extracted from its main ore (Al2O3)? |  |
| (b) | We have carried out the displacement reaction between zinc and copper sulfate on two separate occasions in the lab. We were investigating different aspects of the reaction each time. On each occasion, what were we investigating? |  |
| (c) | One of the formulas shown in the video was incorrect. Which formula was it, and what should the formula have been? |  |