Seb Academy
Topic: Simple Cells
Time allowed: 40 min

Date: _____

Name: _____

Simple Cells Homework 1

Skill 1 Simple Cells Observations

- describe electrolysis as the conduction of electricity by an ionic compound (an electrolyte), when molten or dissolved in water, leading to the decomposition of the electrolyte

- Fill in the blanks
  - Label the cathode & anode and strike out one of the options.

[3]

Fill in the blanks, also for:

[8]

- In this simple cell, copper is the _____.
- And _____ is the anode.
- _____ gas is given off at the cathode.
- Electrons move from the _____ <write name of electrode> to _____ <write name of electrode>.
- Magnesium is _____ <reduced / oxidised> to form _____ and _____.

- All simple cell experiments are <endothermic / exothermic>.

[Total: 8 marks]

2 (2018/SNGS/FE/1) When metal P and Q are connected by a wire and dipped into an aqu
flow from Q to P. When metal R is dipped into a salt solution of metal P, there is no visible
Based on the information given, which of the following gives the correct order of metal reac

		Most reactive ➔ Least reactive	
A	**P**	**Q**	**R**
B	**P**	**R**	**Q**
C	**Q**	**P**	**R**
D	**Q**	**R**	**P**

3 Some reactions of the metals Q, R and S are given below.

Metal	**Reaction in air**	**Reaction with water**	**Reaction with dilute hydrochloric acid**
Q	burns to form metallic oxide	reacts with steam to form hydrogen	hydrogen formed
R	reacts slowly to form metallic oxide	does not react	does not react
S	reacts to form metallic oxide	does not react	hydrogen formed

In the galvanic cell, Q^+, R^+ and S^+ would represent cations of these three metals.
Which simple cell will produce the greatest voltage?

A **B** **C**

4 A simple cell was set up as shown in the diagram.

Which of the following will give rise to the highest ammeter reading?

	electrolyte **L**	metal **M**
A	dilute sulfuric acid	zinc
B	distilled water	magnesium

C	dilute nitric acid	silver
D	ethanol	silver

5 Which of the following statements describes what happens when hydrogen and oxygen are used in a fuel cell?

A Electricity is generated directly.
B Electricity is used to produce water.
C Hydrogen is burned to form steam.
D Hydrogen reacts to form a hydrocarbon fuel.

6 Fossil fuel is a finite resource and its uses contribute to environmental problems. Scientists have been researching on alternative sources of fuel. An alternative fuel is the hydrogen-oxygen fuel cell. The hydrogen-oxygen fuel cell is known as a form of "clean energy'.

(a) Explain why the hydrogen-oxygen fuel cell is considered a form of "clean energy' but not fossil fuel. [2]

(b) Identify the source of hydrogen that is supplied to the hydrogen-oxygen fuel cell. [1]

(c) The cross section of a hydrogen-oxygen fuel cell is shown in Figure 1.

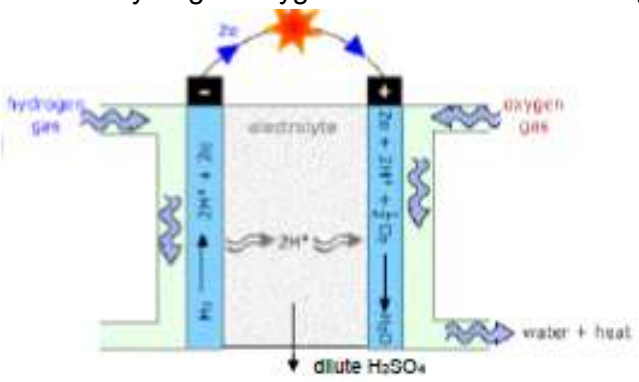

Figure 1

(i) Write the balanced chemical equation, with state symbols for the overall reaction that occurs in the hydrogen-oxygen fuel cell. [1]

(ii) Is hydrogen gas oxidised or reduced in the reaction? Explain your answer. [1]