

UNIT 5B PRACTICE QUIZ 3 – ELECTROCHEMICAL CELLS

Do not answer these questions on this document.

Write your answers on a sheet of paper; then click on the answer sheet provided at the end of the questions.

Use your Periodic Table and the reactivity series in your course notes.

Use this information to answer questions 1 – 3:

Xavier decides to set up a galvanic cell.

He uses an iron electrode dipped in a solution of iron chloride and a magnesium electrode dipped in a solution of magnesium chloride.

He connects the two electrodes with a light bulb and connects the two solutions with a salt bridge. The bulb lights up.

1.	Which one of the following statements is true?	
	A	The iron ions are reduced and the magnesium is oxidised.
	B	The magnesium ions are reduced and the iron is oxidised.
	C	The iron ions are reduced and the chloride ions are oxidised.
	D	The magnesium ions are reduced and the chloride ions are oxidised.
1		

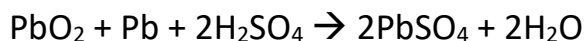
2.	Which one of the following statements is true?	
	A	The overall net ionic equation is: $\text{Fe} + \text{Mg}^{2+} \rightarrow \text{Fe}^{2+} + \text{Mg}$
	B	Electrons move from the magnesium electrode to the iron electrode
	C	The magnesium electrode gets gradually bigger
	D	The iron chloride solution gets gradually more concentrated
1		

3.	Which one of the following statements is true?	
	A	This is an example of electrolysis.
	B	The magnesium is the positive electrode.
	C	The cell will still work if you take the salt bridge away.
	D	In this cell, chemical energy is being converted into electrical energy.
1		

UNIT 5B – CHEMICAL REACTIONS II – REDOX REACTIONS

Use this information to answer questions 4 – 5:

The lead-acid battery is used in cars. The reaction which takes place is:



4.	An advantage of the lead-acid battery is that	
	A	it is easily portable because of its low density
	B	it can withstand a large current
	C	it doesn't contain any harmful chemicals
	D	it cannot be re-charged
1		

5.	A disadvantage of the lead-acid battery is that	
	A	it is very heavy
	B	it can withstand a large current
	C	it doesn't contain any harmful chemicals
	D	it cannot be recharged
1		

6.	The electrolysis of molten aluminium oxide	
	A	is how aluminium metal is made
	B	produces aluminium at the anode
	C	produces oxygen at the cathode
	D	is a way of producing an electric current
1		

7.	If you electrolyse brine, which is a concentrated solution of sodium chloride, you will get	
	A	sodium at the cathode and chlorine at the anode
	B	sodium at the cathode and oxygen at the anode
	C	hydrogen at the cathode and chlorine at the anode
	D	hydrogen at the cathode and oxygen at the anode
1		

8.	If you electrolyse sea water, which is a dilute solution of sodium chloride, you will get	
	A	sodium at the cathode and chlorine at the anode
	B	sodium at the cathode and oxygen at the anode
	C	hydrogen at the cathode and chlorine at the anode
	D	hydrogen at the cathode and oxygen at the anode
1		

UNIT 5B – CHEMICAL REACTIONS II – REDOX REACTIONS

9.	The electrolysis of aqueous copper sulfate produces	
	A	copper at the cathode and sulfur at the anode
	B	copper at the cathode and oxygen at the anode
	C	hydrogen at the cathode and oxygen at the anode
	D	hydrogen at the cathode and sulfur at the anode
		1

10.	It is not possible to use an aqueous solution of zinc sulfate to electroplate iron with a layer of zinc because	
	A	iron is more reactive than zinc
	B	zinc is more reactive than iron
	C	zinc is more reactive than hydrogen
	D	iron is more reactive than hydrogen
		1

[Go to the answer sheet](#)