

A Level Chemistry B (Salters)

H433/01 Fundamentals of chemistry

Elements from the Sea

Question Set 3

Multiple Choice Questions

1 Which process is **not** oxidation?

- **A** $NH_4^+ \rightarrow NO_2^-$ **B** $NO_3^- \rightarrow N_2$
- $C N_2 \rightarrow NO$
- $D NO_2^- \rightarrow NO_3^-$

Your answer

[1]

Chlorine reacts with bromide ions in sea water, producing bromine.Which statement about this process is **not** correct?

- A Bromide ions are oxidised.
- **B** The chlorine is obtained from sea water.
- **C** Bromine forms because it is more reactive than chlorine.
- **D** Chlorine molecules are reduced.

Your answer

[1]

3 Which formula has the correct systematic name?

	Formula	Systematic name	
Α	Na ₂ SO ₃	sodium sulfate(VI)	
В	NaC <i>l</i> O ₃	sodium chlorate(III)	
С	Cu ₂ S	copper(I) sulfide	
D	Pb(NO ₃) ₂	lead(II) nitrate(III)	

Your answer

[1]

4 Which row correctly shows the main products in electrolysis using graphite electrodes?

	Electrolyte	Product at the anode	Product at the cathode
Α	MgBr ₂ (I)	bromine	magnesium
В	CuSO ₄ (aq)	oxygen	hydrogen
С	NaC <i>l</i> (aq)	chlorine	sodium
D	PbS(I)	hydrogen sulfide	lead

Your answer

5 A solution of salt **X** gives a green precipitate with sodium hydroxide solution.

What is X?

- A lron(II) chloride
- **B** Iron(III) sulfate
- C Barium chloride
- **D** Barium sulfate

Your answer

[1]

6 Aspirin is synthesised by the reaction below.



What is the atom economy of this reaction for producing aspirin?

- **A** 25%
- **B** 43%
- **C** 50%
- **D** 75%

Your answer

[1]

7 Which row of the table is correct?

	Formula	Systematic name	
Α	NaC <i>l</i> O	sodium chlorate(I)	
В	CuS	copper(I) sulfide	
С	NaIO ₃	sodium iodate(III)	
D	HNO ₂	nitrous acid	

Your answer

[1]

8 A reaction that occurs during the production of bromine in some industrial plants is shown below.

 $\mathsf{Br}_2(\mathsf{aq}) \ + \ \mathsf{SO}_2(\mathsf{g}) \ + \ 2\mathsf{H}_2\mathsf{O}(\mathsf{I}) \ \rightarrow \ 2\mathsf{H}\mathsf{Br}(\mathsf{aq}) \ + \ \mathsf{H}_2\mathsf{SO}_4(\mathsf{aq})$

Which statement about this reaction is correct?

- **A** Bromine is oxidised.
- **B** Sulfur ends in oxidation state +4.
- **C** The mixture becomes less acidic during the reaction.
- **D** Bromide ions are formed.

[1]

Total Marks for Question Set 3: 8



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