

Revision Sheet

A-Level Chemistry · Unit 6 Electrochemistry

6 vocabulary items · 7 marks of exam questions (7 questions)

Part 1 · Vocabulary review (6 items). The terms this unit is examined on most. Mark it yourself from the answer key.

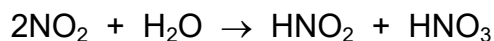
Section A · Chinese to English

Write the English word.

- | | | |
|----|-------|-----|
| 1. | <hr/> | [1] |
| 2. | <hr/> | [1] |
| 3. | <hr/> | [1] |
| 4. | <hr/> | [1] |
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| 6. | <hr/> | [1] |

Part 2 · Exam questions (7 marks, 7 questions) begins on the next page. They are ordered easy to difficult and none of them has been set before.

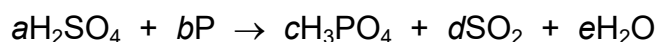
7 Nitrogen dioxide reacts with water.

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Which statement about this reaction is correct?

- A** Both products are formed because oxygen atoms gain electrons.
- B** Nitrogen atoms undergo disproportionation.
- C** The oxidation number of hydrogen is increased.
- D** Water acts as an oxidising agent.

8 Phosphorus reacts with concentrated sulfuric acid to produce phosphoric acid, sulfur dioxide and water.

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a , b , c , d and e are all whole numbers.

The equation can be balanced by using oxidation numbers.

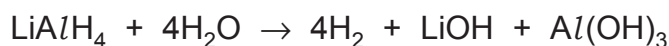
What is the value of the sum $a + b + c + d + e$?

- A** 10 **B** 14 **C** 15 **D** 16

9 LiAlH_4 contains AlH_4^- ions in which aluminium has an oxidation state of +3.

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LiAlH_4 reacts with water, as shown.



In this reaction, each of the four water molecules produces one hydroxide ion. It does this by losing one H^+ ion, which reacts with the LiAlH_4 .

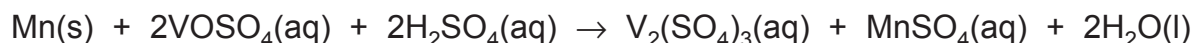
Which changes in oxidation number occur in this reaction?

- A** Al increases by 1 and H decreases by 1.
- B** H decreases by 2 and also increases by 1.
- C** H increases by 1 and also decreases by 1.
- D** O decreases by 1 and H increases by 1.

- 10** The vanadium salt, VOSO_4 , is soluble in water and reacts readily with powdered manganese in dilute sulfuric acid.

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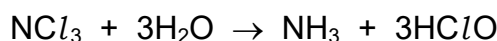
The equation for the reaction is shown.



Which statement about this reaction is correct?

- A** Hydrogen is oxidised in the reaction.
- B** Manganese is the reducing agent in this reaction.
- C** Sulfuric acid is the oxidising agent in this reaction.
- D** The oxidation state of the vanadium changes from +5 to +3.

- 11** NCl_3 reacts with H_2O .

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The oxidation state of nitrogen does not change in this reaction.

Which statement is correct?

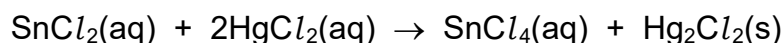
- A** Chlorine is reduced.
- B** Chlorine is oxidised.
- C** Hydrogen is both oxidised and reduced.
- D** This is not a redox reaction.

- 12** In which row do the oxidation numbers of vanadium increase?

☐

	smallest	→	largest
A	VO_4^{3-}	VO_3^-	VO_2^+
B	VO^{2+}	V_2O_3	VO_4^{3-}
C	V_2O_3	VO^{2+}	VO_3^-
D	VO_4^{3-}	VO_2^+	VO^{2+}

- 13** The equation for a redox reaction is shown.

☐

Which species is being oxidised in this reaction?

- A** Sn^{2+}
- B** Cl^-
- C** Hg^+
- D** Hg^{2+}