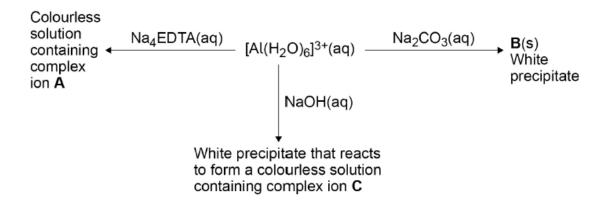
## AQA – Transition metal – A2 Chemistry P1

1. June/ 2020/Paper\_1/No.5

0 5 Some reactions of the [Al(H<sub>2</sub>O)<sub>6</sub>]<sup>3+</sup>(aq) ion are shown.



0 5. 1 Give the formula of the white precipitate **B**.

State one other observation when  $Na_2CO_3(aq)$  is added to a solution containing  $[Al(H_2O)_6]^{3+}(aq)$  ions.

Give an equation for this reaction.

[3 marks]

Formula of **B** 

Observation

Equation

0 5 . 2 Give the formula of the complex ion C.

State one condition needed for the formation of  $\bf C$  from  $[Al(H_2O)_6]^{3+}(aq)$  and NaOH(aq).

Give an equation for this reaction.

[3 marks]

Formula of C

Condition

Equation

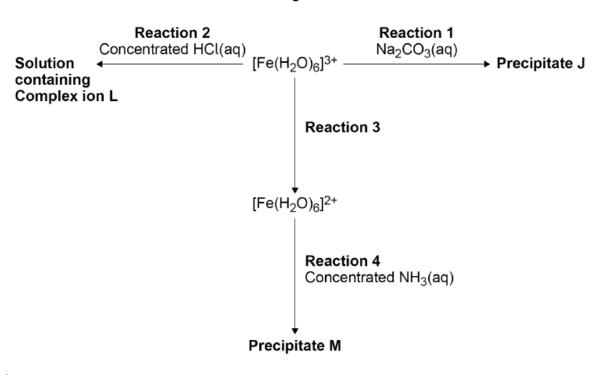
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0 5.3	Deduce the formula of the complex ion A. [1 mark]
0 5.4	Explain, with the use of an equation, why a solution containing [Al(H $_2$ O) $_6$ ] $^{3+}$ has a pH <7 [3 marks]
	Equation
	Explanation

## 2. June/ 2019/Paper\_1/No.4

0 4 Figure 3 shows some reactions of aqueous iron ions.

Figure 3



0 4 . 1 Give the formula of **Precipitate J** and state its colour.

Give an equation for Reaction 1.

[3 marks]

Formula of **J** 

Equation

Colour

0 4 . 2 Give the formula of L and an equation for Reaction 2.

[2 marks]

Formula of L

Equation

0 4 Suggest a reagent for **Reaction 3**.

[1 mark]

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0 4 . 4	Give the formula of <b>Precipitate M</b> and state its colour.  [2 marks]
	Formula of M
	Colour
0 4 . 5	Transition metal complexes have different shapes and many show isomerism.
	Describe the different shapes of complexes and show how they lead to different types of isomerism.  Use examples of complexes of cobalt(II) and platinum(II).
	You should draw the structures of the examples chosen.  [6 marks]

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