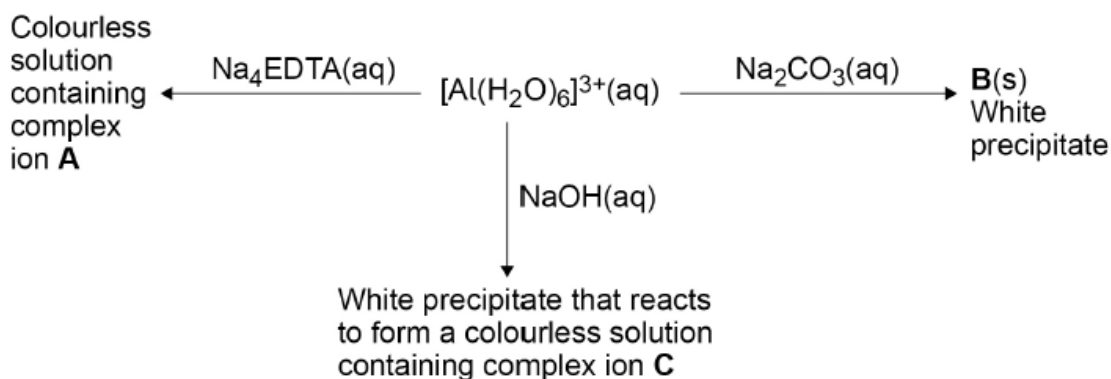


**AQA – Transition metal – A2 Chemistry P1**

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

0 5

Some reactions of the  $[\text{Al}(\text{H}_2\text{O})_6]^{3+}(\text{aq})$  ion are shown.

0 5 . 1

Give the formula of the white precipitate **B**.

State **one** other observation when  $\text{Na}_2\text{CO}_3(\text{aq})$  is added to a solution containing  $[\text{Al}(\text{H}_2\text{O})_6]^{3+}(\text{aq})$  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 **C** from  $[\text{Al}(\text{H}_2\text{O})_6]^{3+}(\text{aq})$  and  $\text{NaOH}(\text{aq})$ .

Give an equation for this reaction.

**[3 marks]**

Formula of **C** \_\_\_\_\_

Condition \_\_\_\_\_

Equation \_\_\_\_\_

0 5 . 3 Deduce the formula of the complex ion **A**.

[1 mark]

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0 5 . 4 Explain, with the use of an equation, why a solution containing  $[\text{Al}(\text{H}_2\text{O})_6]^{3+}$  has a pH < 7

[3 marks]

Equation

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Explanation

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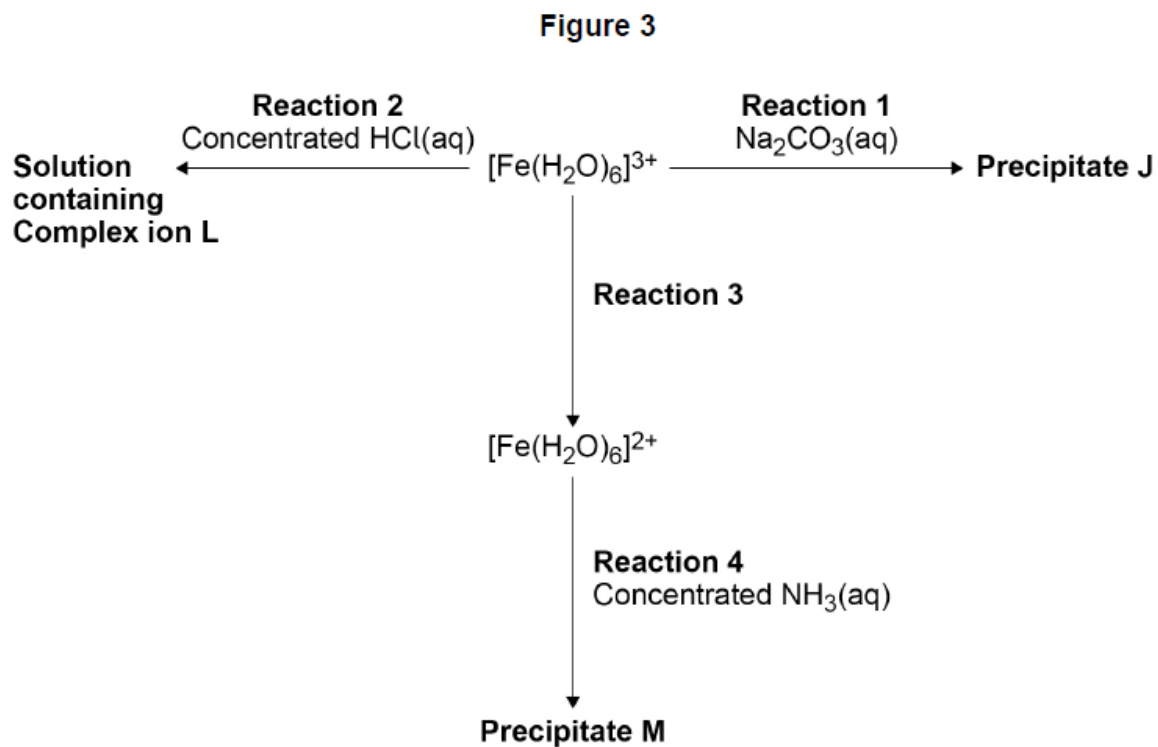
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## 2. June/ 2019/Paper\_1/No.4

0 4

Figure 3 shows some reactions of aqueous iron ions.



0 4 . 1

Give the formula of **Precipitate J** and state its colour.  
 Give an equation for **Reaction 1**.

[3 marks]

Formula of J \_\_\_\_\_

Colour \_\_\_\_\_

Equation \_\_\_\_\_

0 4 . 2

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

[2 marks]

Formula of L \_\_\_\_\_

Equation \_\_\_\_\_

0 4 . 3

Suggest a reagent for **Reaction 3**.

[1 mark]

\_\_\_\_\_



