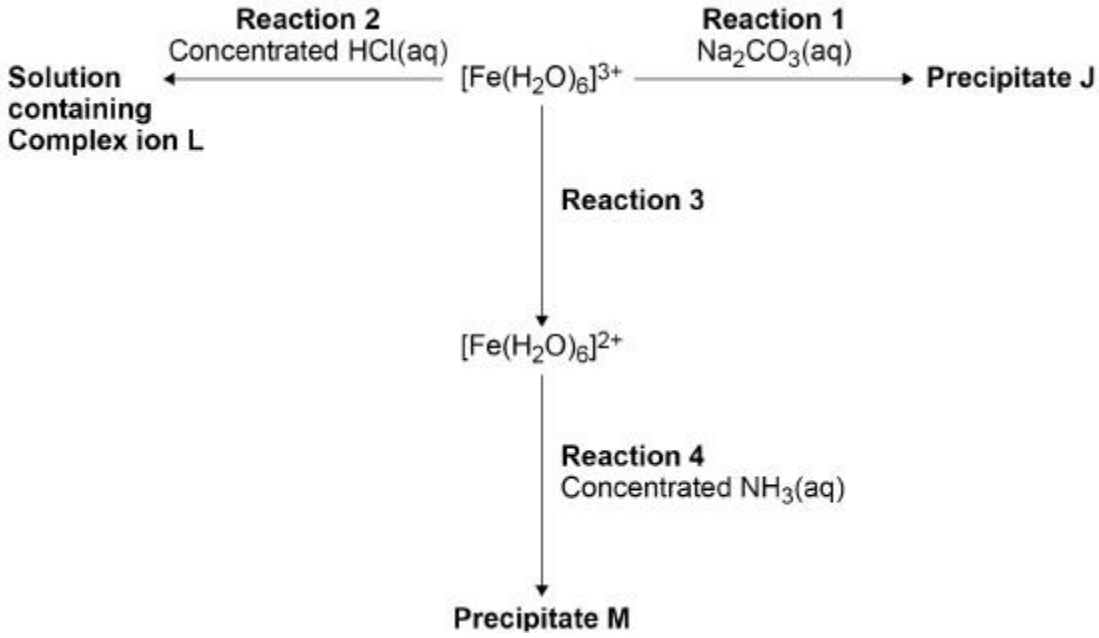
Practice Question Set For A-Level
Subject : Chemistry
Paper-1 Topic: Inorganic 2

Merit Minds
www.merit-minds.com
Exam Preparation and Free Resources

Name of the Student:_____
Max. Marks : 27 Marks **Time : 27 Minutes**

Q1.

The diagram shows some reactions of aqueous iron ions.



(a) Give the formula of **Precipitate J** and state its colour.

Give an equation for **Reaction 1**.

Formula of **J** _____

Colour _____

Equation

_____

(3)

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

Formula of **L** _____

Equation

_____

(2)

(c) Suggest a reagent for **Reaction 3**.

_____

(1)

(d) Give the formula of **Precipitate M** and state its colour.

Formula of **M** _____

Colour _____

(2)

(e) 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)

(Total 14 marks)

Q2.

This question is about some Group 7 compounds.

(a) Solid sodium chloride reacts with concentrated sulfuric acid.

Give an equation for this reaction.
State the role of the sulfuric acid in this reaction.

Equation

_____

Role _____

(2)

(b) Fumes of sulfur dioxide are formed when sodium bromide reacts with concentrated sulfuric acid.

For **this** reaction
- give an equation
- give **one** other observation
- state the role of the sulfuric acid.

Equation

_____

Observation _____

_____

Role _____

(3)

(c) Chlorine reacts with hot aqueous sodium hydroxide as shown in the equation.

$$3\ Cl_2 + 6\ NaOH \rightarrow NaClO_3 + 5\ NaCl + 3\ H_2O$$

Give the oxidation state of chlorine in $NaClO_3$ and in NaCl

$NaClO_3$ _____

NaCl _____

(1)

(d) State, in terms of redox, what happens to chlorine in the reaction in part **(c)**.

_____

_____

(1)

(e) Solution **Y** contains **two** different negative ions.

To a sample of solution **Y** in a test tube a student adds
- silver nitrate solution

- then an excess of dilute nitric acid
- finally an excess of concentrated ammonia solution.

The observations after each addition are recorded in the table.

Reagent added to solution Y	**Observation**
silver nitrate solution	cream precipitate containing compound **D** and compound **E**
excess dilute nitric acid	cream precipitate **D** and bubbles of gas **F**
excess concentrated ammonia solution	colourless solution containing complex ion **G**

Give the formulas of **D**, **E** and **F**.
Give an **ionic** equation to show the formation of **E**.
Give an equation to show the conversion of **D** into **G**.

Formula of **D** _____

Formula of **E** _____

Formula of **F** _____

Ionic equation to form **E**

_____

Equation to show the conversion of **D** into **G**

_____

(6)

(Total 13 marks)