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

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Name of the Student:_____
Max. Marks : 16 Marks **Time : 16 Minutes**

Q1.

Solution **A** contains the compound $[Cu(H_2O)_6]Cl_2$

(a) State the type of bonding between the oxygen and hydrogen in this compound.

_____

(1)

(b) State why the chloride ions in this compound are **not** considered to be ligands.

_____

_____

_____

(1)

(c) An excess of ammonia was added to a sample of solution **A** to form solution **B**.

Write an ionic equation for the reaction that occurs when solution **A** is converted into solution **B** and state the colour of solution **B**.

Equation _____

_____

Colour _____

(2)

(d) Aqueous sodium carbonate was added to another sample of solution **A** to form a blue-green solid **C**.

Identify the blue-green solid **C**.

_____

(1)

(e) Reagent **D** was added to another sample of solution **A** to form a yellow-green solution.

Identify reagent **D** and write an ionic equation for the reaction that occurs when the yellow-green solution is formed from solution **A**.

Identity of reagent **D** _____

Equation _____

_____

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(2)

(f) Explain why colorimetry cannot be used to determine the concentration of solutions containing $[CuCl_2]^-$

In your answer refer to the electron configuration of the metal ion.

_____

_____

_____

_____

(2)

(Total 9 marks)

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Q2.

This question is about the chemistry of some Group 2 elements.

(a) Write an equation for the reaction of calcium with water at 25 °C and predict a possible value for the pH of the solution formed.

Equation

_____

pH _____

(2)

(b) State the trend in solubility, in water, of the Group 2 sulfates from magnesium to barium.

_____

(1)

(c) State the trend in solubility, in water, of the Group 2 sulfates from magnesium to barium.

Reagent _____

Equation

_____

(2)

(d) Explain why the melting point of calcium sulfate is high.

_____

_____

_____

_____

_____

_____

_____

(2)

(Total 7 marks)

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