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

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Q1.

(a) (i) The addition of aqueous silver nitrate, followed by concentrated aqueous ammonia, can be used to distinguish between separate aqueous solutions of sodium bromide and sodium iodide.
Record what is observed in the table below.

	The addition of $AgNO_3(aq)$ followed by	the addition of concentrated $NH_3(aq)$
Observation with NaBr(aq)		
Observation with NaI(aq)		

(ii) Explain why it is not possible to distinguish between separate solutions of sodium nitrate and sodium fluoride by the addition of silver nitrate solution.

_____

(5)

(b) When aqueous sodium thiosulphate is added to solid silver bromide a reaction occurs and a colourless solution is formed.

(i) Identify the silver-containing species present in the colourless solution.

_____

(ii) Write an equation for this reaction.

_____

(iii) Give **one** use of this reaction.

_____

(3)

(c) Aqueous silver nitrate can be used to distinguish between chloroethanoic acid and ethanoyl chloride.

(i) Draw the structure of ethanoyl chloride. Predict what, if anything, you would observe when ethanoyl chloride is added to aqueous silver nitrate.

Structure of ethanoyl chloride

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Observation _____

_____

(ii) Draw the structure of chloroethanoic acid. Predict what, if anything, you would observe when chloroethanoic acid is added to aqueous silver nitrate.

Structure of chloroethanoic acid

Observation _____

_____

(4)

(d) (i) Tollens' reagent is formed by the addition of aqueous ammonia to aqueous silver nitrate. Identify the silver-containing complex present in Tollens' reagent and state its shape.

Silver-containing complex _____

Shape _____

_____

(ii) Draw the structure of methanoic acid. By reference to this structure, suggest why a silver mirror is formed when this acid reacts with Tollens' reagent.

Structure _____

Explanation _____

_____

(iii) Deduce the identity of a carbon-containing species formed when methanoic acid reacts with Tollens' reagent.

_____

(5)

(Total 17 marks)

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