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

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Name of the Student:_____
Max. Marks : 13 Marks **Time : 13 Minutes**

Q1.

Chlorine is a useful industrial chemical.

(a) Chlorine gas is used in the manufacture of chlorine-containing organic compounds.

(i) Write equations for the following steps in the mechanism for the reaction of chlorine with ethane to form chloroethane (CH_3CH_2Cl).

Initiation step

_____

First propagation step

_____

Second propagation step

_____

A termination step producing butane.

_____

(4)

(ii) Give **one** essential condition and name the type of mechanism in this reaction of chlorine with ethane.

Essential condition _____

Type of mechanism _____

(2)

(b) Chlorine reacts with cold water.

(i) Write an equation for this reaction.

_____

(1)

(ii) Give **one** large-scale application of the use of chlorine in water. Explain why it is used in this application even though chlorine is very toxic. Do **not** include cost.

Example of application _____

Explanation of use _____

(2)

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(iii) Two different chlorine-containing compounds are formed when chlorine reacts with cold, dilute sodium hydroxide solution. One of these compounds is sodium chloride.
Name the other chlorine-containing compound formed.

_____

(1)

(c) Chlorine is used in the extraction of bromine from seawater.

(i) Write the **simplest** ionic equation for the reaction of chlorine with bromide ions.

_____

(1)

(ii) Explain why bromine has a higher boiling point than chlorine.

_____

_____

_____

(2)

(Total 13 marks)

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