

OLGC S.3 CHEMISTRY HOLIDAY WORK

CHLORINE AND ITS COMPOUNDS

(1) (a) Briefly describe how a dry sample of hydrogen chloride can be prepared in the laboratory

(b) hydrogen chloride was bubbled through a solution of lead(II) nitrate

(i) state what was observed and explain your answer

(ii) write an equation for the reaction that took place

(2) (a) Chlorine can be prepared in the laboratory using potassium manganate(VII).

(i) Name one substance that reacts with potassium manganate(VII) to produce chlorine

(ii) State the conditions for the reaction

(iii) Write the equation for the reaction

(b) Damp litmus paper was dropped in a gas jar containing chlorine. State what was observed and explain your observation.

(c) A boiling tube filled with chlorine water was inverted into a beaker containing chlorine water and the mixture exposed to sunlight for some time

(i) State what was observed

(ii) Explain with the aid of equation(s) your observation(s) in c(i)

(d) Write an equation to show how chlorine can react with

(i) Dilute potassium hydroxide solution

(ii) Turpentine

(e) Briefly describe a test you would carry out to confirm the presence of chloride ion in solution. State what would be observed and write an equation for the reaction that would take place.

(3) (a) Describe how a pure dry sample of chlorine can be prepared in the laboratory from potassium manganate(VII) crystals

(b) State what would be observed if chlorine was bubbled through a

(i) Blue litmus solution

(ii) Potassium bromide solution

(iii) Solution of iron(II) ions

(c) Write equation for the reaction in b(ii) and b(iii)

(d) Write equation for the reaction between chlorine and

(i) Heated iron

(ii) Cold dilute sodium hydroxide solution

(iii) Hot concentrated sodium hydroxide solution

(4) (a) Describe how a pure sample of chlorine can be prepared in the laboratory starting from potassium permanganate

(b) State what would be observed and write equation for the reaction that would occur if

(i) Chlorine was bubbled into aqueous sodium hydroxide solution

(ii) Burning magnesium was lowered into a gas jar of chlorine

(iii) Chlorine was passed through a solution of potassium iodide

(c) State the uses of chlorine

(5) (a) State what would be observed if chlorine was bubbled through

(i) Water

(ii) Potassium bromide solution

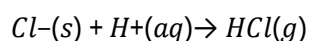
(b) Explain your observation in

(i) a(i)

(ii) a(ii)

(c) write equations for the reactions taking place in each case

(6) (a) hydrogen chloride can be prepared from the according to the following equation



Calculate the mass of sodium chloride required to produce 3.60dm³ of hydrogen chloride at room temperature

(b) state what would be observed and in each case write an equation for the reaction that would take place when

(i) an aqueous solution of hydrogen chloride is added to a solution containing lead(II) ions

(ii) excess dry hydrogen chloride is passed over strongly heated iron wire

(c) briefly explain the following

(i) anhydrous iron(II) chloride cannot be prepared by direct synthesis using

(iii) Magnesium

(8) (a) (i) Describe with aid of a well labeled diagram how a sample of iron(III) chloride can be prepared from concentrated hydrochloric acid and potassium permanganate

(b) What happens when

(i) Water is added to iron(III) chloride

(ii) Iron(III) chloride is exposed to air

(iii) Magnesium

(8) (a) (i) Describe with aid of a well labeled diagram how a sample of iron(III) chloride can be prepared from concentrated hydrochloric acid and potassium permanganate

(b) What happens when

(i) Water is added to iron(III) chloride

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