FORM TWO TERM ONE EXAMS 2017

MARKING SCHEME
CHEMISTRY
FORM 2

SCHOOLS NET KENYA

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FORM 2 MARKING SCHEME
1(a) (i). green yellow
(ii). Soluble
(iii).shiny dark grey solid
(b).(i). $MnO_{2(S)} + 4HCI_{(I)}$ \longrightarrow $MnCI_{2(aq)} + CI_{2(g)} + 2 H_2O_{(L)}$
(ii). To oxidize HCl into chlorine gas
(iii). $KMnO_4$ is a stronger oxidizing agent, it easily oxidizes HCl into chlorine gas.
IV) economical since heating is not required
-production of chlorine gas can easily be controlled
(v). iron (III) chloride/ FeCl ₃
(vi). 3 $Cl_{2(g)}$ +2 $Fe_{(s)}$ 2FeCl3 _(s)
(c(i)). hydrogen gas
(ii). $Ca_{(s)} + 2 H_2O_{(l)}$ \longrightarrow $Ca(OH)_{2(aq)} + H_{2(g)}$
(iii). The calcium hydroxide formed is slightly soluble. Only a few OH are produced.
(iv). Calcium hydroxide is used to the presence of carbon (IV) oxide gas.
2.(a)sodium continues to burn with a white flame.

-a white solid substance is formed.

(ii)
$$Na_{(s)} + Cl_{2(g)}$$
 \longrightarrow $NaCl_{(s)}$

(iii) used as food additive.

(b)(i). -grey solid observed.

-Droplets of colourless liquid.

(ii).
$$H_{2(g)} + PbO_{(s)}$$
 \longrightarrow $H_2O_{(l)} + Pb_{(s)}$

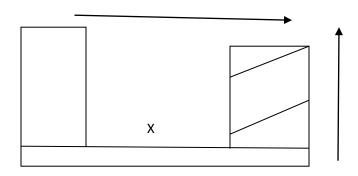
(iii). -Reducing property/ reducing agent.

(iv). For activation energy and to speed up the reaction.

- 3.(i). oxygen gas/ O₂
 - (ii). The PH would reduce. The unstable chloric (I) acid decomposes into acidic HCl.
 - (iii). The unstable yellow chloric (I) acid decomposes into oxygen and colourless HCI
 - (iv). $2HOCl_{(aq)}$ $\underline{sunlight}$ $2HCl_{(aq)} +O_{2(q)}$
- (v). <u>it turns red and then bleached (colorless)</u>. *It turns red* due to the acidic HCl. The dye in the litmus paper combines with the nacent oxygen atom from the unstable chloric (IO acid hence bleached.

(vi).
$$HOCI_{(aq)} + dye_{(coloured)}$$
 \longrightarrow $dye + O$ $bleached) + HCI_{(aq)}$

- (vii)- manufacture plastics eg PVC
 - -water treatment
 - -manufacture bleaches used in paper industries (accept any other correct use)
- 4(a)(i).



- (ii) I. transition metals. II. Non metals.
- (b)(i). MgCl₂ (ignore state symbols; accept correct equation)
- I. Harmfull substance released into the environment.
 - II. Soot is produced when hydrocarbons burn in limited supply of oxygen.
- (iii).I. Used to absorb carbon (iv) gas from the air.
 - II. Used to absorb moisture from the air.

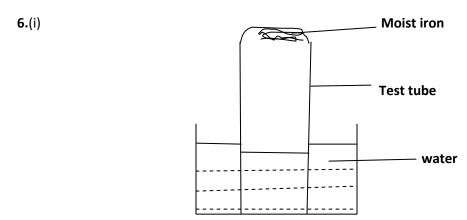
(b). at A.
$$2 H_{2(l)} + O_{2(g)} \longrightarrow 2H_2O_{(l)}$$

At B.
$$Zn_{(s)} + 2HCl_{(aq)} \longrightarrow ZnCl_{2(aq)} + H_{2(g)}$$

- (ii)(a). to drive away the air initially in the tube to avoid oxidation of hot magnesium.
 - To produce steam to react with heated magnesium.
 - (b). K- hydrogen gas/ H_2
 - (C). It is less dense than air

(d).
$$H_2O_{(g)} + Mg_{(s)}$$
 \longrightarrow $MgO_{(s)} + H_{2(g)}$

- (e) .a. Upward delivery/ downward displacement of air.
 - b. Downward delivery/upward displacement of air.
- (ii). Method (b). carbon (iv) oxide is denser than air.
- 5. (a). curve B. pure substances have sharp melting and boiling points.
 - (b). Impurities lower the melting points but raises the boiling points. Of substances.
 - (c).-Hydrogen; acetylene/ ethyne.



- (ii). Their colour changed from grey to red brown. They reacted with moisture/water and air to form rust.
- (iii). Rusting destroys appearance of materials.. it also weakens them.
- (iv).cool to -200°c and carry out fractional distillation to obtain nitrogen.
- (v). lime raises the soil PH/reduces the acidity of the soil/.