Structure {Paper02}

[MRSM10-05a]

(*a*) (i) 2 Li + Cl_2 → 2 LiCl

(ii)0 → -1

(iii) Li atom lose/donate 1 electrons

[MRSM10-05b]

(i)]Purple layer is formed

(ii) $Br_2 + 2I^- \rightarrow I_2 + 2Br^-$

(iii) Oxidising agent

[SBPTrial10-05]

(a) (i) Colourless change Brown

(ii) Bromide ion //potassium bromide [substance that lose e/ ↑ oxi no]

(iii) 2Br- → Br_2 + 2e [lose e/ increase oxi no]

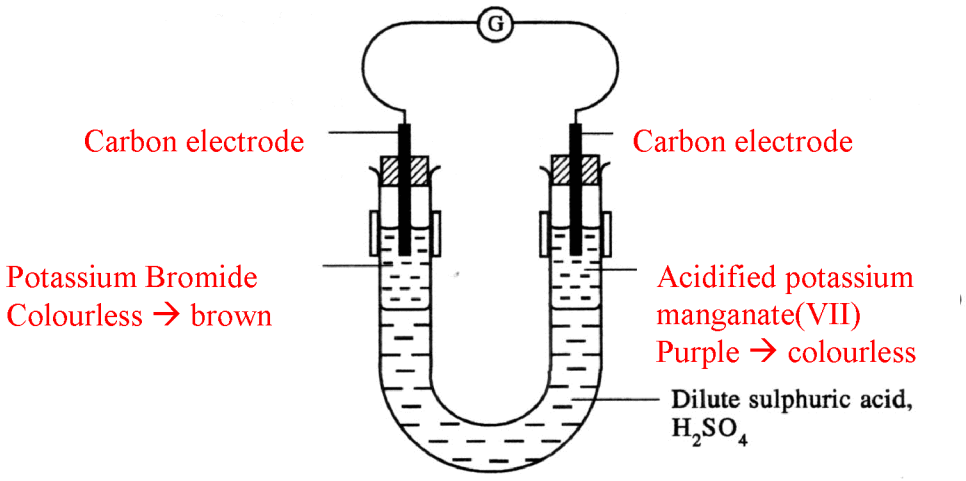
(b) Brown layer formed

(c) Chlorine water, because it gain/ receive electron

(d) 0 to -1

(e) Acidified potassium manganate(VII) solution// Acidified potassium dichromate(VI) solution

(f)



[SPM03-05]

(a) (i) Brown solid is formed.
Blue solution turns colourless.
(ii) Green solution turns brown.
Brown colour of bromine decolorizes.
(b) $Mg + Cu^{2+} \rightarrow Mg^{2+} + Cu$
(c) A substance that receives electron.

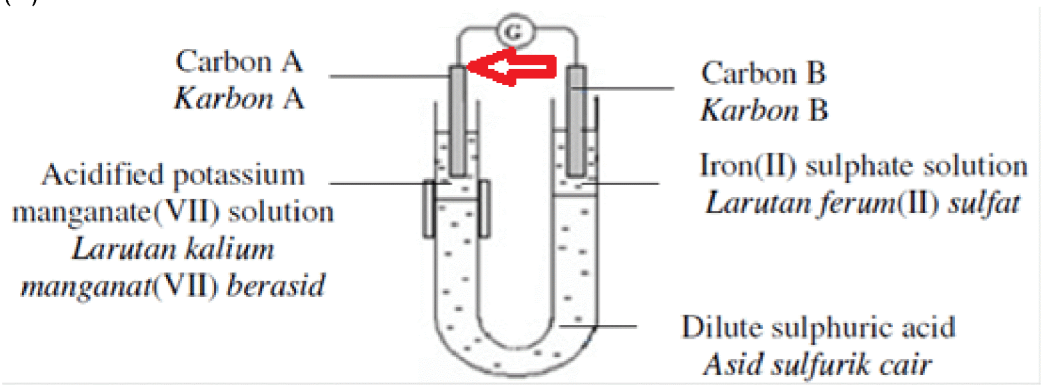
(d) (i) 0 → +2
(ii) copper(II) ion // copper(II) sulphate

(e) (i) redoxs
(ii) 0
(iii) oxidising agent
(iv) chlorine water

[MRSM11-04]

(*a*) A chemical reaction in which oxidation and reduction occur simultaneously

(*b*)



(*c*) X + 4(-2) = -1 [1]
X = +7 [2] [reject X = 7, xde tanda "+']

(*d*) *Reduction*

(*e*) (i) $FeSO_4$

(ii) *Green colour of iron(II) sulphate turns to brown*

(iii) $Fe^{2+} \rightarrow Fe^{3+} + e$

(iv) [method] Add 2 cm^3 of the solution produce into test tube, then add NaOH until excess.
[result] brown precipitate formed, not dissolves in excess

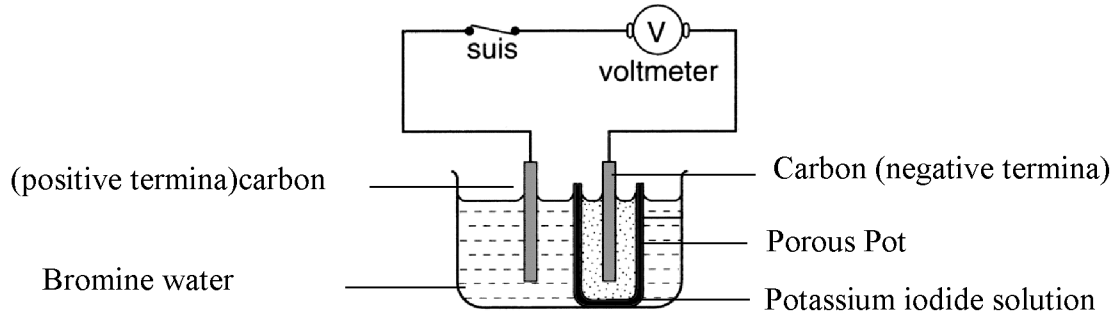
[SPM11-06]

(a) green

(b) (i). $Fe^{2+} \rightarrow Fe^{3+} + e$

(ii). Oxidation

(d)



[SBPtrial09-06]

(a) (i) Acidified potassium manganate(VII) solution

(ii) Fe^{2+} ----------→ $Fe^{3+} + e^-$

Green solution turns to colourless

(iii) From electrode carbon X to Y

(iv) X + 4 (-2) = -1
X + (-8) = -1
X = +7

(b) (i) $Cl_2 + 2I^-$ ----------→ $I_2 + 2Cl^-$

(ii) An oxidizing agent//substance

(iii) -1 to 0

(iv) Bromine water

[MRSM09-06]

(i) Iodine (solution)

(ii) MnO_4^- + ..8... H^+ + ..5.. e → Mn^{2+} + .4.. H_2O

(iii) Change in oxidation number : +7 to +2
Name of process : reduction

(iv) sodium iodide

(*b*) (i) Zinc

(ii)2 Zn + O_2 → 2 ZnO

(iii) K, J, L

iv) No reaction.
Because Metal L is more reactive than metal J

[MRSM06-05]

(a) brown

(b) Iodide/ potassium iodide

(c) From P to Q // P → Q

(d) (i) iodine. : -1 to 0

(ii) bromine : 0 to -1

(e) $Br_2 + 2I^- \rightarrow I_2 + 2Br^-$

(f) (i) 1. 3 drop of brown solution was added into 2 cm^3 of starch in test tube
2. blue black colour formed

(ii) 1. iodide ion donate/ lose electron and formed iodine atom
2. 2 iodine atom combine with each other to form iodine molecule

(g) Same reading of Galvanometer like before [kiv]

[MRSM05-06]

(a) (i) Chemical energy → electrical energy

(ii) Colourless → brown [*sbb iodine terhasil*]

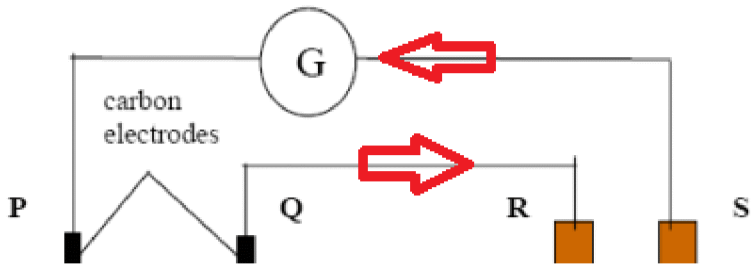
(iii) $2I^- \rightarrow I_2 + 2e$

(b) (i) Electrode R became thicker

(ii) 1 . Intensity of Blue unchanged
2. Because rate to produce Cu^{2+} ion at anode is equal to rate discharge Cu^{2+} ion at cathode.
3. The number of Cu^{2+} ion in the solution remain same

(iii) $Cu + Cu^{2+} \rightarrow Cu + Cu^{2+}$

(c)



(d) (i) No reading

(ii) 1. Tetrachloromethane is organic solvent.
2. It not allowed ions through it. So the circuit is not completed

(e) Bubbles gas released

[MRSM10-05c]

(c) (i) Zinc

(ii) J, H, T, Mg

(iii) 1. Metal J lowest in arrangement because metal J can displace from it Metal Oxide by hydrogen
2. Metal T and Metal Mg is higher than Hydrogen, because Hydrogen cannot react with their metal oxide.
3. Mg is higher because, metal T is Zn, it less reactive than Mg.

[MRSM05-03]

(a) Displacement reaction

(b) (i) Reducing agent

(ii) Aluminium gain oxygen

(c) (i) $2\ Al + Fe_2O_3 \rightarrow 2\ Fe + Al_2O_3$

(ii) Mol Fe_2O_3 = mass / molar mass = 4 / [56x2 + 16x3] = 0.025 mol [1]

1 mol Fe_2O_3 will produce 2 mol Fe
0.025 mol Fe_2O_3 will produce 0.05 mol Fe [2]

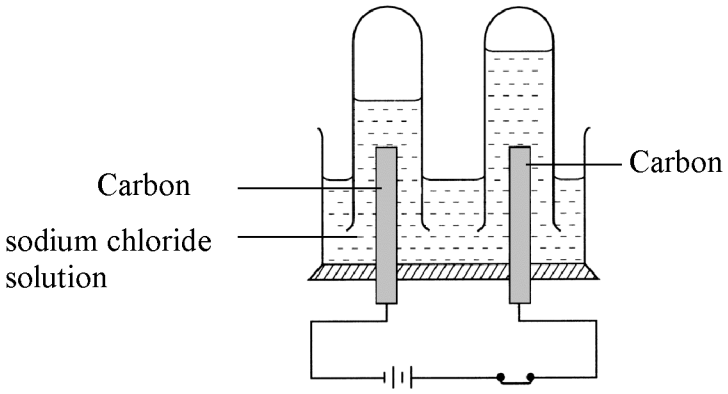
Mass Fe = 0.05 X 56 = 2.8 g [3]

(d) (i) Produce more heat energy / easy to exploded

(ii) Cheap/ easy to handle

[SPM05-06]

(a) (i)



(ii) 1. Place the burning splinter near the mouth of test tube
2. Pop sound produce

(iii) 1. Hydrogen ions are attract to cathode
2. Hydrogen ion gain/ receive electron to formed hydrogen atom
3. 2 hydrogen atom combine with each other to formed hydrogen molecule

(b) (i) MgO

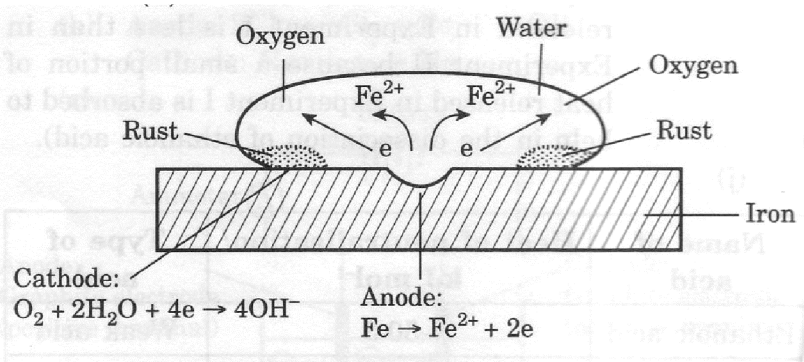
(ii) $2Mg + O_2 \rightarrow 2MgO$

(iii) Oxidation number of Magnesium is +2
Oxidation number of Oxygen is -2

[SPM07-06]

(a) (i) water and oxygen

(ii)



(b) (i) Fe^{2+} and OH^- ions combine to form iron(II) hydroxide.
Iron(II) hydroxide is oxidised to iron(III) hydroxide.
Iron(III) hydroxide form hydrated iron(III) oxide/ rust.

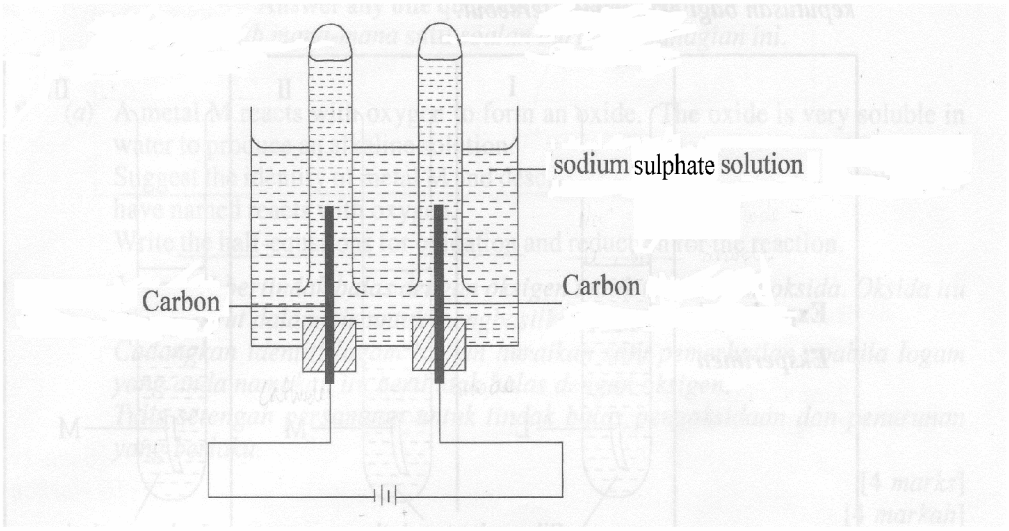
(ii) +2 → +3

(c) (i) Zinc is more electropositive than iron.
Zinc atoms lose electrons more easily than iron.
Zinc corrodes but iron does not.

(ii) $Zn \rightarrow Zn^{2+} + 2e$

[SPM05-06]

(a) (i)



(ii) A burning splinter gives a 'pop' sound.

(iii) Na^+ and H^+ ions are attracted towards the cathode. H^+ ions are selected to be discharged as hydrogen gas.

(b) (i) MgO

(ii) $2Mg + O_2 \rightarrow 2MgO$

(iii) Oxidation number for:
Magnesium = +2
Oxygen = -2

----------oooOO aĎaŽ OOooo----------