SULIT
4541/2
Chemistry
Paper 1
Paper 2
Oktober 2009
Marking Scheme

JABATAN PELAJARAN MELAKA

PEPERIKSAAN SELARAS AKHIR TAHUN
TINGKATAN 4 MATA PELAJARAN SAINS DAN MATEMATIK
SEKOLAH-SEKOLAH MENENGAH NEGERI MELAKA
Kelolaan
PEJABAT PELAJARAN DAERAH
MELAKA TENGAH * ALOR GAJAH * JASIN
Dengan Kerjasama :
JABATAN PELAJARAN MELAKA
JALAN ISTANA, BUKIT BRUANG, MELAKA.

MARKING SCHEME
CHEMISTRY

Paper 1 and Paper 2

Skema Permarkahan ini mengandungi 10 halaman bercetak

SKEMA PERMARKAHAN
CHEMISTRY 1
4541/1

No soalan	Jawapan	No soalan	Jawapan	No soalan	Jawapan	No soalan	Jawapan	No soalan	Jawapan
1	B	11	B	21	B	31	D	41	C
2	D	12	B	22	C	32	A	42	C
3	B	13	D	23	A	33	D	43	B
4	C	14	A	24	B	34	C	44	A
5	A	15	C	25	A	35	A	45	C
6	D	16	D	26	C	36	B	46	C
7	C	17	D	27	C	37	A	47	D
8	C	18	B	28	B	38	C	48	B
9	D	19	C	29	B	39	D	49	C
10	D	20	B	30	A	40	D	50	A

Paper 2 Section A

1	(a)		13		1
	(b)		20// 21		1
	(c)	(i)	Atoms of the same element which have same proton number but different number of neutron		1
		(ii)	B & E		1
	(d)		(i) correct number of neutron (ii) correct number of proton (iii) correct number of shell and electron	1 1 1	3
	(e)	(i)	D		1
		(ii)	A		1
	(f)		2.8		1 **10**

2	(a)	The metal oxide burns / glows // droplets of a colourless liquid formed		1
	(b)	Anhydrous calcium chloride to dry the hydrogen gas	1 1	2
	(c)			

	M	O
Mass (g)	92.02 – 42.34 = 49.68	95.86 – 92.02 = 3.84
No. of mol	49.68/ 207 = 0.24	3.84/ 16 = 0.24
Simplest mol ratio	1	1

	1 1 1	
Empirical formula is MO	1	4
(d) (i) correct reactant (ii) correct product	1 1	2
$MO + H_2 \rightarrow M + H_2O$		**9**

3	(a)	(i)	Group 1, Period 4	1+1	2
		(ii)	G		1
	(b)	(i)	D_2L		1
		(ii)	Soluble in water // High melting/ boiling point // Can conduct electricity in molten or aqueous state		1
	(c)	(i)	E		1
		(ii)	Nuclei attraction towards valence electrons is weaker in E	1	

			Thus, it is easier for atom of E to release an electron to form a positively charged ion	1	2
	(d)	(i)	L / M		1
		(ii)	Covalent bond		1 **10**

4	(a)		XY_3		1
	(b)	(i)	Covalent bond		1
		(ii)	2.5		1
		(iii)	X: Group: 15 , Period : 2 Y: Group : 17 , Period : 2	1 1	2
	(c)		Low melting and boiling point//cannot conduct electricity// dissolve in organic solvent		1
	(e)		(i) correct reactant (ii) correct product (iii) balance equation $X_2 + 3Y_2 \rightarrow 2XY_3$	1 1 1	3 **9**

5	(a)		P : - , Q : +		1
	(b)		To allow the ion to flow through		1
	(c)		- from chemical energy to electrical energy		1
	(d)		Iron / P is more electropositive than copper / Q // iron is placed higher than copper in the electrochemical series		1
	(e)	(i)	Intensity of the blue solution decrease		1
		(ii)	$Cu^{2+} + 2e \rightarrow Cu$		1
	(f)	(i)	copper electrode / R becomes thicker // a brown solid deposited		1
		(ii)	R : - , S : +		1
	(g)	(i)	voltage in Figure 5.2 is higher than in Figure 5.1I / more than 1.2 V		1
		(ii)	The distance between zinc and copper in the electrochemical series is further than that between iron and copper		1 **10**

6	(a)		Strong acid is an acid which **ionizes completely in water** to produce **high concentration of hydrogen ions**.	1 1	2
	(b)		Neutralisation		1
	(c)		(iv) correct reactant (v) correct product (vi) balance equation $2NaOH + H_2SO_4 \rightarrow Na_2SO_4 + 2H_2O$	1 1 1	3
	(d)		Pink to colourless		1
	(e)		From the equation in (c). 1 mole of H_2SO_4 reacts with 2 moles of NaOH		

			$\frac{1.0 \times 20.00}{M_{NaOH} \times 25.00} = \frac{1}{2}$	1	
			$M_{NaOH} = 1.6\ moldm^{-3}$	1	2
	(f)		$2.0\ moldm^{-3}$		1
	(g)		Twice / $50.00\ cm^3$		1
	(h)		Ammonium sulphate		1
					12

Section B

7	(a)	(i)	Bond which formed when two or more atom share the valence electron	1	
			to achieved the stable electron arrangement	1	2
		(ii)	**<u>Ionic bond</u>**:		
			1. Between atom B and C	1	
			2. Atom B has electron arrangement 2.8.1	1	
			3 .Atom B will donate 1 valence electron	1	
			4 .to achieve the stable electron arrangement	1	
			5 .and become positively charged ion// $B \rightarrow B^+ + e$	1	
			6. Atom C has 6 valence electron	1	
			7. accept 2 electron and become negatively charge ion// $C + 2e \rightarrow C^{2-}$	1	
			8. 2 atom B will donate1 electron each to 1 atom C	1	
			9 The force of attraction between ions are very strong	1	
			<u>Covalent bond</u>:		
			10. Between atom C and D	1	
			11. To achieve the stable electron arrangement	1	
			12. One atom D will share 4 electron with 2 atom C	1	
			13. Force of attraction between molecules are weaker	1	13

		(iii)			

Type of Compound	Ionic compound	Covalent compound
Melting point & Boiling point	Higher	Lower
Electric Conductivity	Can conduct electricity in molten state or aqueous solution	Cannot conduct electricity
Solubility	Dissolve in water but cannot in organic solvent	Dissolve in organic solvent but cannot in water

				1 1 1	 3
	(b)		Atom L has 2 valence electron, Donate 2 electron to achive the stable electron arrangement	1 1	2
					20

8	(a)		Alkali A – sodium hydroxide/ barium hydroxide / potassium hydroxide strong alkali ionises completely in water to produce high concentration of OH^- Alkali B – ammonia solution Weak alkali Ionizes partially in water to produce low concentration of OH^-	1 1 1 1 1 1	 6
	(b)	(i)	X : methylbenzene/ tetrachloromethane/ any organic solvents Y : water	1 1	 2
		(ii)	Hydrogen chloride ionizes completely in water to form H^+, so solution X shows acidic properties . Without water, hydrogen chloride exists as molecules There are no H^+ present, so solution Y does not show acidic properties	1 1 1 1	 4

	(c)		Calculation $2.0 \times \text{Volume}_{acid} = 1.0 \times 100$ $\text{Volume}_{acid} = \frac{1.0 \times 100}{2.0}$ // $= 50\ cm^3$ 1. Use a pipette to draw up 50 cm^3 2.0 $moldm^{-3}$ sulphuric acid . 2. Transfer the acid to a 100 cm^3 volumetric flask. 3. Add distilled water to bring the level of solution until the calibration mark. 4. Stopper the flask and shake well.	1 1 1 1 1 1	6
	(d)		Add powdered lime/ lime stone / ashes of burnt wood Reason – weak alkali, can neutralize acidity in the soil	1 1	2 **20**

Section C

9	(a)		Salt is an ionic compound formed when the hydrogen ion in an acid is replaced by a metal ion or an ammonium ion		1
	(b)		Material 2 mol dm^{-3} nitric acid, copper (II) oxide powder Apparatus 250 cm^3 beaker, glass rod, filter funnel, retort stand and clamp, Bunsen burner, 250 cm^3 conical flask, filter paper, evaporating dish, 50 cm^3 measuring cylinder, spatula. Procedure 1. Pour 50 cm^3 of 2 mol dm^{-3} nitric acid into a beaker. 2. Warm the acid. 3. Add copper(II) oxide powder bit by bit into the acid. 4. Stir the mixture .	1 1 1 1 1 1	

			5. Add copper(III) oxide until some of it no longer dissolve. 6. Filter the mixture. 7. Heat the filtrate until it become saturated. 8. Let it cool 9. Filter out the crystals. 10. Dry the crystal using the dry filter paper. Chemical equation: $2\ HNO_3 + CuO \rightarrow Cu(NO_3)_2 + H_2O$	1 1 1 1 1 1 1	13
	(c)		(i) Acid + alkali → salt + water Example: $HCl + NaOH \rightarrow NaCl + H_2O$ (ii) Acid + metal → salt + hydrogen Example : $2HNO_3 + Mg \rightarrow Mg(NO_3)_2 + H_2$ (iii) Acid + base → salt + water Example: $H_2SO_4 + CuO \rightarrow CuSO_4 + H_2O$ (iv) Acid + metal carbonate → salt + water + carbon dioxide. Example: $2HCl + CaCO_3 \rightarrow CaCl_2 + H_2O + CO_2$	1 1 1 1 1 1 1 1 1	Max 6 **20**

10	(a)		Solid sodium chloride consists of ions which are held in fixed positions by strong ionic bonds and are not freely moving. In aqueous sodium chloride, the ionic bonds are broken and the ions move freely.	1 1	2
			Materials : 0.1 mol dm^{-3} silver nitate solution, wooden splinter, sandpaper Apparatus: Batteries, carbon electrodes, silver electrodes, electrolytic cell, connecting wires with crocodile clips, ammeter, test tube and switch. [or labelled diagram of set-up of apparatus] Procedure : 1. An electrolytic cell is half-filled with 0.1 mol dm^{-3} silver nitrate solution. 2. The electrodes are connected to batteries and an ammeter with connecting wires. 3. A test tube filled with silver nitrate solution is inverted over the anode. 4. The switch is turned on and electric current is allowed to flow for 15 minutes. 5. Observations at anode and cathode are recorded. 6. Steps 1- 6 are repeated using silver electrodes in place of carbon electrodes. 7.	1 1 1 1 1 1 1 1	

Observations:

Electrode	Observation	
	Anode	Cathode
Carbon	Bubbles of colourless gas released, relights a glowing wooden splinter.	A shiny, grey solid deposited.
Silver	Silver electrode becomes thinner.	A shiny, grey solid deposited // cathode becomes thicker

1+1

1+1

			Silver nitrate solution consists of Ag^+, NO_3^-, H^+, OH^- ions .	1	
			When carbon is made the anode , OH^- ions are selectively discharged because they are lower than NO_3^- ions in the electrochemical series to produce oxygen gas //	1	
			$4\ OH^- \rightarrow O_2 + 2\ H_2O + 4\ e$		
			At the cathode, Ag^+ ions are lower than H^+ ions in the electrochemical series and are selectively discharged to form silver metal //	1	
			$Ag^+ + e \rightarrow Ag$		
			When silver is made the anode, silver atoms ionise to form Ag^+ ions. The silver anode dissolves //	1	
			$Ag \rightarrow Ag^+ + e$		
			At the cathode, Ag^+ ions are lower than H^+ ions in the electrochemical series and are selectively discharged to form silver metal //	1	
			$Ag^+ + e \rightarrow Ag$		17
		(ii)	Type of electrode// Concentration of electrolyte// position of ion in Electrochemical Series.		1 **20**

END OF MARKING SCHEME

SULIT

4541/3
Chemistry
Paper 3
October

1 1/2 hours

PEPERIKSAAN SELARAS AKHIR TAHUN
TINGKATAN 4 MATA PELAJARAN SAINS DAN MATEMATIK
SEKOLAH-SEKOLAH MENENGAH NEGERI MELAKA

Kelolaan :
PEJABAT PELAJARAN DAERAH
MELAKA TENGAH * ALOR GAJAH * JASIN
Dengan Kerjasama :
JABATAN PELAJARAN MELAKA
JALAN ISTANA, BUKIT BERUANG, MELAKA

CHEMISTRY

Paper 3

One hour and thirthy minutes

MARKING SCHEME

<table>
<tr><th colspan="2">Question</th><th>Details</th><th>Score</th></tr>
<tr><td>1</td><td>(a)</td><td>[Able to state the three variables correctly]

Example,
<table><tr><td>Manipulated variable</td><td>Position of elements / metals in Group 1 //
Position of Group 1 // Position of alkali metals</td></tr><tr><td>Responding variable</td><td>Rate of reaction // Reactivity of the reaction</td></tr><tr><td>Fixed variable</td><td>Volume of water, size of metal used</td></tr></table></td><td>3</td></tr>
<tr><td></td><td>(a)</td><td>[Able to state any two variables correctly]</td><td>2</td></tr>
<tr><td></td><td>(a)</td><td>[Able to state any one variables correctly]</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>(b)</td><td>[Able to state the relationship between manipulated variable and responding variable correctly]

Example,
When going down Group 1, alkali metals become more reactive in their reaction with water //
The lower the metal in Group1, the more reactive the reaction with water

Responding variable → Manipulated variable , score = 2</td><td>3</td></tr>
<tr><td></td><td>(b)</td><td>[Able to state the relationship between manipulated and responding variable]

Example,
Position metal of Group 1 will give different reaction when react with water //
The more reactive the reaction, the lower the position of the metal in Group 1</td><td>2</td></tr>
<tr><td></td><td>(b)</td><td>[Able to state an idea of the hypothesis]

Example,
Metal / Element / Group 1 can react with water</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>(c)</td><td>[Able to state the operational definition accurately with 3 statements below:-
(a) Metal / Element of Group 1 in the Periodic Table
(b) Reacts with water [vigorously / slowly]
(c) [More / Less] reactive metal

Example,
Metal of Group 1 in the Periodic Table reacts more vigorously with water is a more reactive metal //
Metal of Group 1 in the Periodic Table reacts less vigorously with water is a less reactive metal</td><td>3</td></tr>
</table>

	(c)	[*Able to state the operational definition* with any 2 statements below:- (d) Metal / Element of Group 1 in the Periodic Table (e) Reacts with water [vigorously / slowly] (f) [More / Less] reactive metal Example, Metal of Group 1 in the Periodic Table can react with water at different rate can show their reactivity with water // Element of Group 1 in the Periodic Table react with water at different rate //	2
	(c)	[*Able to state the operational definition* with any 2 statements below:- (g) Metal / Element of Group 1 in the Periodic Table (h) Reacts with water [vigorously / slowly] (i) [More / Less] reactive metal Example, Metal of Group 1 can react with water // Element of Group 1 is a reactive metal	1
1	(d)	[*Able to state the inference accurately*] Example, The solution produced is a strong alkali	3
	(d)	[*Able to state the inference correctly*] Example, The solution produced is an alkali // The solution is an alkali	2
	(d)	[*Able to give idea for inference*] Example, Alkali	1
1	(e)	[*Able to state the relationship accurately*] Example, The lower position of the metal in Group 1, the higher the reactivity of the metal towards water // The higher position of the metal in Group 1, the lower the reactivity of the metal towards water	3

<table>
<tr><td></td><td>(e)</td><td>[Able to state the relationship correctly but less accurate]

Example,
The reactivity of the metals is inversely proportional to their position in the group.</td><td>2</td></tr>
<tr><td></td><td>(e)</td><td>[Able to state an idea of a retionship]

Example,
Position of metals / elements affects the reactivity //
Position of metals / elements affects the reactivity towards water</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>1</td><td>(f)</td><td>[Able to arrange the metals in descending order based on their reactivity]

Example,
Rb, K, Na, Li //
Rubidium, Potassium, Sodium, Lithium //
Rb → K → Na → Li</td><td>3</td></tr>
<tr><td></td><td>(f)</td><td>[Able to arrange the metals in ascending order based on their reactivity]

Example,
Li, Na, K, Rb //
Lithium, Sodium, Potassium, Rubidium //
Li → Na → K → Rb</td><td>2</td></tr>
<tr><td></td><td>(f)</td><td>[Able to arrange the position of at least three metals in descending order based on their reactivity]</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="3"></td><td></td></tr>
<tr><td>2</td><td>(a)</td><td>[Able to record the readings to two decimal places accurately with unit]

Example,
<table><tr><td>The mass of combustion tube and porcelain dish</td><td>195.03 g</td></tr><tr><td>The mass of combustion tube, porcelain dish and copper oxide</td><td>197.06 g</td></tr><tr><td>The mass of combustion tube, porcelain dish and copper</td><td>196.64 g</td></tr></table>
Score = 2 if no unit</td><td>3</td></tr>
</table>

<table>
<tr><td></td><td></td><td>[Able to record the readings correctly but still with four decimal places with unit]

Example,
<table><tr><td>The mass of combustion tube and porcelain dish</td><td>195.0265 g</td></tr><tr><td>The mass of combustion tube, porcelain dish and copper oxide</td><td>197.0572g</td></tr><tr><td>The mass of combustion tube, porcelain dish and copper</td><td>196.6362 g</td></tr></table>
Score =1 if no unit</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to record only any 2 readings correctly without 2 decimal point and unit]</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td>(b)</td><td>[Able to show the calculation of the mass accurately with unit]

Example,
Mass of copper = (196.64 – 195.03) g
= 1.51 g

Mass of oxygen = (197.06 – 196.64) g
= 0.42 g</td><td>3</td></tr>
<tr><td></td><td></td><td>[Able to show the calculation of the mass correctly but without unit]

Example,
Mass of copper = (196.64 – 195.03) g
= 1.51

Mass of oxygen = (197.06 – 196.64) g
= 0.42</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to show any one of the mass correctly <u>with or without</u> unit]

Example,
Mass of copper = 1.51 g
or
Mass of oxygen = 0.42 g</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><td>2</td><td>(c)</td><td>[Able to determine the empirical formul accurately]

Example,
<table><tr><td></td><td>Elements</td><td>Cu</td><td>O</td></tr><tr><td>Point 1</td><td>Number of mole // mole , mol</td><td>1.51/64
= 0.03</td><td>0.42/16
= 0.03</td></tr><tr><td>Point 2</td><td>Simplest ratio</td><td>1</td><td>1</td></tr></table>Point 3 Empirical formula : CuO</td><td>3</td></tr>
<tr><td></td><td></td><td>[Able do determine the empirical formula inaccurately]

Example,
• Point no. 1 or 2
• Point no. 3</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to write the empirical formula]

Example,
▪ Point no. 1 or 2 or 3</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td>(d)</td><td>[Able to give the statement that shows the number of mole of copper atom and number of mole of oxygen atom that have been reacted]

Example,
1 mol of copper atom reacts with 1 mol of oxygen atom.</td><td>3</td></tr>
<tr><td></td><td></td><td>[Able to show the ratio of number of mole of copper atom and mole of oxygen atom that have been reacted]

Example:
1 mol of copper atom(Cu): 1 mol of oxygen atom (O)
Or
Cu : O
1 : 1</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to show the ratio of number of mole of copper atom and number of mole of oxygen atom that have been reacted]
Example :
1 : 1 // 1 // 1 mole</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td>(e)</td><td>[Able to state the change in colour correctly]

Example,
Black to brown // Black → brown</td><td>3</td></tr>
</table>

<table>
<tr><td></td><td></td><td>[Able to state the change in colour less correctly]

Example,
Turn to brown // brown</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to give a relevant colour]

Example,
Colour change// any colour other than brown</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td>(f)</td><td>[Able to classify all the metal oxides with their chemical formulae correctly]

Example,

<table><tr><th>Metal oxide</th><th>Chemical formula</th></tr><tr><td>Lead(II) oxide</td><td>PbO</td></tr><tr><td>Silver oxide</td><td>Ag_2O</td></tr><tr><td>Tin(IV) oxide</td><td>SnO_2</td></tr><tr><td>Iron(II) oxide</td><td>FeO</td></tr></table></td><td>3</td></tr>
<tr><td></td><td></td><td>[Able to classify any three of the metal oxides with their chemical formulae correctly]</td><td>2</td></tr>
<tr><td></td><td></td><td>[Able to classify any two of the metal oxides with their chemical formulae correctly]</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="2">Question 3</td><td></td><td></td></tr>
<tr><td>3</td><td>(i)</td><td>[Able to state the aim of the experiment correctly]

Example,
To study the electroplating of <u>copper</u> on a silver ring using <u>electrolysis</u> //
To produce the electroplating of copper on a silver ring using <u>electrolysis</u> //
To investigate the electroplating of a silver ring with <u>copper</u> using <u>electrolysis</u></td><td>3</td></tr>
<tr><td></td><td>(i)</td><td>[Able to state the aim of the experiment less accurately]

Example,
To study the electroplating of silver ring</td><td>2</td></tr>
</table>

	(i)	[*Able to give an idea for the aim of the experiment*] Example, Silver ring coat with copper // Silver ring change colour Silver ring become brown ring // Ring change colour	1
3	(ii)	[*Able to state every variables accurately*] Example, Manipulated variable : Position of the silver ring as an electrode // Position of the silver ring as anode Responding variable : Deposition of copper on the silver ring // Colour change of silver ring Constant variable : Type of electrolyte / [copper(II) sulphate solution / copper(II) chloride solution / copper(II) nitrate solution] // Copper strip/electrode as the anode // Concentration of electrolyte // Duration of electrolysis	3
	(ii)	[*Able to state* **only 2** *variables accurately*]	2
	(ii)	[*Able to state* **only 1** *variables accurately*]	1
3	(iii)	[*Able to state complete materials and apparatus to conduct the experiment*] Example , <u>Material</u> : 1 – 2 mol dm^{-3} [copper(II) sulphate solution / copper(II) chloride solution / copper(II) nitrate solution] 200 ml, copper electrode / strip and silver ring <u>Apparatus</u> : Dry cell / Batteries, Beaker 250ml, connecting wires with crocodile clip / wires, sandpaper, ammeter and switch	3
	(iii)	[*Able to state materials and apparatus to conduct the experiment*] Example , <u>Material</u> : [Copper(II) sulphate solution / Copper(II) chloride solution / Copper(II) nitrate solution], Copper strip/electrode and silver ring <u>Apparatus</u> : Dry cell / Batteries, Beaker (any container except test tube and boiling tube), Connecting wires with crocodile clip / wires and sandpaper	2

<table>
<tr><td></td><td>(iii)</td><td>[Able to state materials and apparatus to conduct the experiment less complete]

Example ,
<u>Material</u> : [Copper(II) sulphate solution / Copper(II) chloride solution / Copper(II) nitrate solution], Copper strip/electrode, silver ring
<u>Apparatus</u> : Dry cell / Batteries, Beaker (any container except test tube and boiling tube), Connecting wires with crocodile clip / wires</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>3</td><td>(iv)</td><td>[Able to state the complete procedure to conduct the experiment]

Example,
1. Silver ring is cleaned with sandpaper
2. [Copper(II) sulphate solution / Copper(II) chloride solution / Copper(II) nitrate solution] is poured into a beaker
3. The apparatus is set-up using a <u>silver ring as the cathode</u> and <u>copper strip/electrode as the anode</u> // Silver ring is used as cathode and copper strip / electrode is used as the anode.
4. The <u>switch is turned on</u> for 30 minutes
5. The silver ring is removed from the electrolyte and it is dried
6. The colour change of the silver ring is recorded.</td><td>3</td></tr>
<tr><td></td><td>(iv)</td><td>[Able to state the procedure to conduct the experiment]

Procedure no. 1, 2, 3, 4 and 5.</td><td>2</td></tr>
<tr><td></td><td>(iv)</td><td>[Able to state the minimum procedure to conduct the experiment]

Procedure no. 2 and 3</td><td>1</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>3</td><td>(v)</td><td>[Able to construct a table with the aspect: (1) Correct title, (2) Correct electrode]

Example,
<table>
<tr><td colspan="2">Electrode</td><td rowspan="2">Observation</td></tr>
<tr><td>Anode</td><td>Cathode</td></tr>
<tr><td>Copper strip / Copper electrode</td><td>Silver ring</td><td></td></tr>
</table>
</td><td>3</td></tr>
</table>

<table>
<tr>
<td></td>
<td>(v)</td>
<td>[Able to construct a table with the correct title]

Example,
<table>
<tr><td colspan="2">Electrode</td><td>Observation</td></tr>
<tr><td>Copper strip /
Copper electrode</td><td>Silver ring</td><td></td></tr>
</table>
</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>(v)</td>
<td>[Able to construct a table with an idea]

Example,
<table>
<tr><td>Electrode</td><td>Observation</td></tr>
<tr><td></td><td></td></tr>
</table>
</td>
<td>1</td>
</tr>
</table>