

**PEPERIKSAAN PERCUBAAN SPM 2020  
DAERAH PERAK TENGAH**

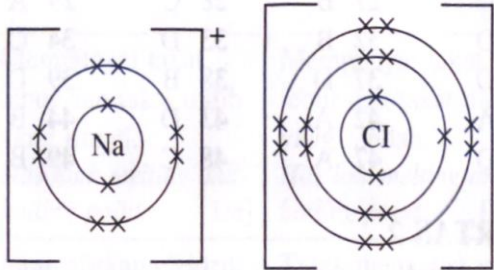
**SKEMA PEMARKAHAN**

**KIMIA KERTAS 1**

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

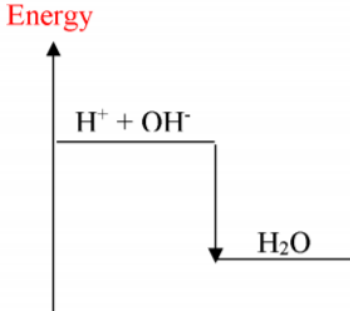
**KERTAS 2**

QUESTION			ANSWER	MARK	
1	(a)	(i)	Large molecules made up of many identical repeating subunits of monomer		1
		(ii)	Polyvinyl chloride/PVC/Polychloroethene		1
	(b)	(i)	Fibre glass		1
		(ii)	Stronger/ harder		1
	(c)	(ii)	Stanum/ timah		1
		(ii)	Atoms of other element added to the pure metal to make an alloy are different in size. These atoms disrupts the orderly arrangement of atoms in pure metal.	1	
			When force is applied to an alloy, the presence of added other atoms prevent layers of atoms from sliding.	1	2
	(d)	(i)	Paracetamol Aspirin is not suitable because it is acidic.	1	
			<i>Parasetamol</i> <i>Aspirin tidak sesuai kerana berasid.</i>	1	2
			<b>TOTAL</b>	<b>9</b>	

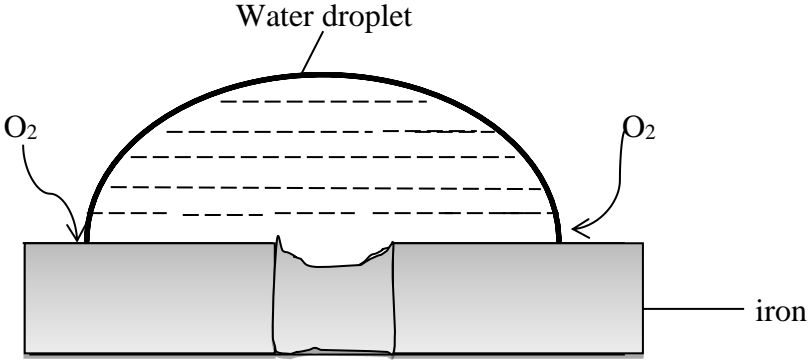
NO SOALAN	RUBRIK		MARKAH	
2	(a)	2.8.8	1	
	(b)	Baris mengufuk dalam Jadual Berkala Unsur	1	
	(c)	(i)	Saiz atom berkurangan	1
		(ii)	Bilangan proton semakin bertambah apabila merentasi kala daripada natrium ke argon . Daya tarikan antara nukleus dengan elektron dalam tiga petala yang terisi dengan elektron semakin kuat. Ini menyebabkan saizatom semakin berkurangan daripada natrium ke argon.	1 1.....2
	(d)	Aluminium	1	
	(e)	(i)	Ikatan ion	1
		(ii)	 <p>Cas betul - 1 Susunan elektron dan bilangan petala betul - 1</p>	2
		<b>JUMLAH</b>	<b>9</b>	

NO SOALAN			RUBRIK	MARKAH													
3	(a)	(i)	Amount of substance that contain as many particle as the number of atoms is exactly 12g of carbon- 12 // $6 \times 10^{23}$ of particles in a substance,		1												
		(ii)	Number of moles of Y = $\frac{4}{40} = 0.1 \text{ mol}$ 2 mol of Y : 2 mol of YO // 0.1 mol of Y : 0.1 mol of YO Mass of YO = $0.1[40 + 16]$ = 5.6 g	1 1 1	3												
	(b)	(i)	$4\text{Fe(s)} + 3\text{O}_2\text{(g)} \rightarrow 2\text{Fe}_2\text{O}_3\text{(s)}$		1												
		(ii)	1. Names of reactants and product 2. Physical states 3. Moles of reactants and product (any two correct) Sample answer 4 mol of solid iron reacts with 3 mol of oxygen gas produces 2 mol of solid iron(II)oxide	1 1 1	...2												
	(c)	(i)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>C</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>Number of mol</td> <td><math>\frac{85.7}{12}</math> =7.1</td> <td><math>\frac{14.3}{1}</math> =14.3</td> </tr> <tr> <td>Simplest ratio</td> <td>1</td> <td>2</td> </tr> <tr> <td>Empirical formula</td> <td colspan="2"><math>\text{CH}_2</math></td> </tr> </tbody> </table>		C	H	Number of mol	$\frac{85.7}{12}$ =7.1	$\frac{14.3}{1}$ =14.3	Simplest ratio	1	2	Empirical formula	$\text{CH}_2$		1 1 1	3
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Simplest ratio	1	2															
Empirical formula	$\text{CH}_2$																
<b>TOTAL</b>				<b>10</b>													

NO SOALAN			RUBRIK	MARKAH
4	(a)	(i)	Hijau kepada perang	1
		(ii)	0 kepada -1	1
		(iii)	$\text{Br}_2 + 2\text{Fe}^{2+} \rightarrow 2\text{Br}^- + 2\text{Fe}^{3+}$	1
		(iv)	1. tambah larutan natrium hidroksida//larutan kalium heksasianoferrat (II)//larutan kalium tiosianat//larutan ammonia.  2. mendakan perang//mendakan biru tua//larutan merah darah//mendakan perang.	1  1
	(b)	(i)	Larutan tidak berwarna berubah kepada ungu	1
		(ii)	Kalium iodida /ion iodida	1
		(iii)	$2\text{I}^- \rightarrow \text{I}_2 + 2\text{e}^-$	1
		(iv)	Ungu	1
		(v)	Air klorin	1
<b>JUMLAH</b>				<b>10</b>

NO SOALAN	RUBRIK	MARKAH	
5 (a)	i. Heat change = $mc\Theta = 200 \times 4.2 \times 13 = 10920 \text{ J}$	1	1
	ii. Mole of $\text{H}^+ = \frac{MV}{1000} = [1000 \times 2.0]/1000 = 0.2 \text{ mol}$ Heat of displacement = $-10920 \text{ J} / 0.2 \text{ mol} = -54.6 \text{ kJmol}^{-1}$	1	2
	iii.		
		1	2
		1	
(b)	Heat released when 1 mole of water produced	1	1
(c)	To reduce the heat loss to the surrounding Polystyrene cup is a better insulator than beaker	1 1	2
(d)	i. Lower heat energy/ less	1	1
	ii. Ethanoic acid is a weak acid Ethanoic acid ionize partially in water to produce $\text{H}^+$	1	
	Some energy/heat used to ionize the acid in water	1	2

Question	Mark scheme	Sub Mark	Total Mark
6 (a)	Rate of reaction is the speed at which the chemical reaction takes place.	1	1
(b)(i)	$\frac{58 - 25}{300 - 0} = 0.11 \text{ cm}^3 \text{ s}^{-1}$	1+1	2
	$\frac{38 - 22}{120 - 60} = 0.267 \text{ cm}^3 \text{ s}^{-1}$	1	1
(ii)	120 - 60		
(c)	Because the amount of reactants decreases with time.	1	1
(d)(i)	Curve II: Higher temperature / Use catalyst	1	
	Curve III : Lower concentration of acid / Less zinc powder	1	2
(ii)	The experiment with the same apparatus set-up is repeated by using $50 \text{ cm}^3$ of $0.5 \text{ mol dm}^{-3}$ hydrochloric acid.	1+1	3
	The volume of gas released is collected at regular intervals.	1	
(iii)	The number of moles of hydrochloric acid used in Experiment III is half than that in Experiment I.	1	1
	<b>TOTAL</b>		<b>11</b>

NO SOALAN	RUBRIK	MARKAH	
7(a)	<p>Reaction X – not a redox reaction            Reaction Y – redox reaction  <u>Reaction X:</u>            No change in oxidation number of reactants</p> <p><u>Reaction Y</u>            Oxidation number of zinc changes/increases from 0 to +2            Oxidation number of copper changes/decreases from +2 to 0            The oxidation and reduction occur simultaneously</p>	1 1 1 1	4
(b)	(i) <p><math>2\text{Fe}_2\text{O}_3 + 3\text{C} \rightarrow 4\text{Fe} + 3\text{CO}_2</math></p> <p>1. correct formula for reactants and products            2. balanced equation</p> <p><input type="checkbox"/> Substance that is oxidised : carbon // C  <input type="checkbox"/> Substance that is reduced : iron (III) oxide // <math>\text{Fe}_2\text{O}_3</math>  <input type="checkbox"/> Oxidizing agent : iron (III) oxide // <math>\text{Fe}_2\text{O}_3</math>  <input type="checkbox"/> Reducing agent : carbon // C</p>	1 1 1 1 1 1.	6
(c)	<div style="text-align: center;">  </div> <p>Functional diagram            Correct labelling of iron, water droplet, oxygen</p> <p>The iron is oxidised / lose electrons to form <math>\text{Fe}^{2+}</math> ions.  <math>\text{Fe} \rightarrow \text{Fe}^{2+} + 2\text{e}^-</math></p> <p>Water molecules and oxygen accept electrons and be reduced to hydroxide ions, <math>\text{OH}^-</math>  <math>2\text{H}_2\text{O} + \text{O}_2 + 4\text{e}^- \rightarrow 4\text{OH}^-</math></p> <p><math>\text{Fe}^{2+}</math> ions and <math>\text{OH}^-</math> ions combine to produce iron(II) hydroxide  <math>\text{Fe}^{2+} + 2\text{OH}^- \rightarrow \text{Fe}(\text{OH})_2</math></p> <p>Iron(II) hydroxide will be further oxidised into iron(III) hydroxide and finally form hydrated iron(III) oxide, <math>\text{Fe}_2\text{O}_3</math>, which is rust.</p>	1 1 1 1 1 1 1 1	10
<b>TOTAL</b>			<b>20</b>

NO SOALAN			RUBRIK	MARKAH
8	(a)	(i)	Asid ialah bahan kimia yang menghasilkan ion hidrogen atau ion hidrosonium apabila dilarutkan dalam air.  Contoh : asid hidroklorik (HCl)/asid nitrik (HNO <sub>3</sub> )/asid sulfurik (H <sub>2</sub> SO <sub>4</sub> )/asid etanoik (CH <sub>3</sub> COOH) dan lain-lain	1  1
		(ii)	Alkali ialah bahan kimia yang larut dalam air untuk menghasilkan ion hidroksida  Contoh : Natrium hidroksida(NaOH), Kalium hidroksida (KOH), larutan ammonia (NH <sub>3</sub> ) <sub>ak</sub>	1  1
	(b)		Natrium hidroksida adalah alkali kuat dan tercerai/terion lengkap dalam air untuk menghasilkan kepekatan ion hidroksida yang tinggi.	1
			Ammonia adalah alkali lemah dan tercerai/terion separa lengkap dalam air untuk menghasilkan kepekatan ion hidroksida yang rendah.	1
			Kepekatan ion hidroksida dalam natrium hidroksida adalah lebih tinggi daripada dalam ammonia.	1
			Oleh itu, nilai pH natrium hidroksida lebih tinggi daripada nilai pH ammonia.	1
	(c)		$2.0 \times V = 0.1 \times 500$ $V = 0.1 \times 500 / 2$ $V = 25 \text{ cm}^3$	1
			• 25 cm <sup>3</sup> asid hidroklorik 2.0 mol dm <sup>-3</sup> disukat menggunakan pipet.	1
			• Asid itu dituangkan ke dalam kelalang volumetrik 500 cm <sup>3</sup> .	1
			• Air suling ditambahkan ke dalam kelalang volumetrik sehingga berhampiran tanda senggatan.	1
			• Dengan menggunakan penitis, air suling ditambahkan hingga mencapai tanda senggatan.	1
			• Kelalang ditutup dengan penutupnya dan digoncang dengan baik untuk mencampurkan sepenuhnya.	1
	(d)		1)Kalsium oksida - digunakan untuk mengawal keasidan tanah.	2
			2) Ammonia - untuk mengelakkan pembekuan susu getah	2
			3) ubat gigi - mengandungi bes yang meneutralkan asid yang dihasilkan oleh bakteria di dalam mulut.	2
<b>JUMLAH</b>				<b>20</b>

QUESTION	RUBRIK	MARK	Σ MARK
9 (a)	• Precipitation / double decomposition reaction	1	4
	• Barium nitrate solution/barium chloride solution [Any sulphate solution] Example: sodium sulphate, potassium sulphate, sulphuric acid <i>Reject : Lead(II) sulphate, calcium sulphate</i>	1	
		1	
	• $Ba^{2+} + SO_4^{2-} \rightarrow BaSO_4$	1	
9 (b)	• R is lead(II) oxide	1	6
	• Gas A is carbon dioxide	1	
	• Gas B is nitrogen dioxide	1	
	• Gas C is oxygen	1	
	• The chemical formulae for P is $PbCO_3$	1	
	• The chemical formulae for Q is $Pb(NO_3)_2$	1	
9 (c)	<b>Procedure:</b>		10
	P1. <b>Add zinc nitrate</b> solution to <b>sodium carbonate</b> solution in a beaker.	1	
	P2. <b>Stir</b> the mixture.	1	
	P3. <b>Filter</b> the white precipitate/solid zinc carbonate formed.	1	
		1	
	P4. <b>Add zinc carbonate</b> to <b>sulphuric acid</b> in a beaker until some zinc carbonate solid <b>no longer dissolve</b> .	1	
	P5. <b>Filter</b> the mixture.	1	
	P6. <b>Transfer</b> the filtrate to a evaporating dish.	1	
	P7. <b>Heat</b> the <b>filtrate</b> (zinc sulphate solution) until <b>saturated</b> // Heat the filtrate to about one-third (1/3) of its initial volume	1	
		1	
P8. <b>Allow</b> the saturated solution to <b>cool</b> at room temperature.	1		
P9. <b>Filter</b> the crystals formed.			
P10. <b>Dry</b> the crystals by pressing it <b>between two sheets of filter papers</b> .			
	<b>Total</b>		<b>20</b>

NO.	ANSWER	MARK	TOTAL MARK
10 (a)	i. Butanol ii. $C_nH_{2n+1}OH$ iii. Hydroxyl group iv. $C_4H_9OH$ ; $  \begin{array}{cccc}  H & H & H & H \\    &   &   &   \\  H-C & -C & -C & -C-OH \\    &   &   &   \\  H & H & H & H  \end{array}  $	1 1 1 1	4
(b)	1. $C_4H_9OH \rightarrow C_4H_8 + H_2O$ 2. Alcohol is soaked in glass wool Catalyst = hot porcelain chips/ aluminium oxides Catalyst = concentrated sulphuric acid @ phosphoric acid Temp = $170^\circ C$	1 1 1 1 1	2
(c)	1. Compound Z is a butanoic acid 2. Butanoic acid is a monoprotic acid due to ionise in water to produce $1 H^+$ per molecule 3. $  \begin{array}{cccc}  H & H & H & O \\    &   &   & // \\  H-C & -C & -C & -C \\    &   &   & \backslash \\  H & H & H & O-H  \end{array}  $ 4. Butanoic acid can conduct electricity in aqueous solution due to presence of free moving ions 5. Butanoic acid does not conduct electricity due to no presence of free moving ion in glacial form 6. Butanoic acid exist as a molecule in glacial form	1 1 1 1 1 1	4





**KERTAS 3**

Question No.	Rubric	Score												
1 (a)	<i>Able to write all observations and corresponding inferences correctly.</i>  Sample Answer:	6												
	<table border="1"> <thead> <tr> <th>Electrode</th> <th>Observation</th> <th>Inference</th> </tr> </thead> <tbody> <tr> <td><b>Carbon anode</b></td> <td>Mass/size of anode does not change // bubbles of gas are released//effervescence</td> <td>Oxygen gas is released</td> </tr> <tr> <td><b>Copper anode</b></td> <td>Mass/size of anode decreases // anode becomes thinner</td> <td>Copper(II) ion is formed</td> </tr> <tr> <td><b>Copper cathode</b></td> <td>Mass/size of cathode increases/becomes thicker // cathode becomes thicker//Brown solid is deposited/formed.</td> <td>Copper is formed</td> </tr> </tbody> </table>		Electrode	Observation	Inference	<b>Carbon anode</b>	Mass/size of anode does not change // bubbles of gas are released//effervescence	Oxygen gas is released	<b>Copper anode</b>	Mass/size of anode decreases // anode becomes thinner	Copper(II) ion is formed	<b>Copper cathode</b>	Mass/size of cathode increases/becomes thicker // cathode becomes thicker//Brown solid is deposited/formed.	Copper is formed
	Electrode		Observation	Inference										
	<b>Carbon anode</b>		Mass/size of anode does not change // bubbles of gas are released//effervescence	Oxygen gas is released										
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	<b>Copper cathode</b>	Mass/size of cathode increases/becomes thicker // cathode becomes thicker//Brown solid is deposited/formed.	Copper is formed											
	<i>Able to write all observations and two corresponding inferences correctly</i>	5												
	<i>Able to write <b>all</b> observations and <b>one</b> corresponding inference correctly// <b>two</b> observations and <b>two</b> corresponding inferences correctly</i>	4												
<i>Able to write <b>two</b> observations and <b>one</b> corresponding inference correctly// Able to write three observations correctly without any inference.</i>	3													
<i>Able to write <b>one</b> observation and corresponding inference correctly. Able to write two observations correctly without any inference.</i>	2													
<i>Able to write <b>any one</b> observation correctly.</i>	1													
<i>No response or wrong response</i>	0													

Question No.	Rubric	Score
1 (b)	<i>Able to state <b>the three variables</b> correctly.</i>  Sample Answer: Manipulated variable: Types of electrodes. Responding variable: Product at the anodes Constant variable: Electrolyte// Copper(II) chloride solution	3
	<i>Able to state <b>any two variables</b> correctly</i>	2
	<i>Able to state <b>any one variable</b> correctly</i>	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1(c)	<i>Able to write the hypothesis correctly with direction</i> Sample answer: Carbon anode produces oxygen gas while copper anode dissolves/produces copper(II) ion.	3
	<i>Able to write the hypothesis without direction</i> Sample answer: Carbon anode produces different product compared to copper anode.	2
	<i>Able to give an idea about hypothesis.</i> Sample answer: Different types of anode produces different substances	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (d)	<i>Able to state the colour change in copper(II) chloride solution accurately after 45 minutes.</i> Sample answer: The blue colour of copper(II) chloride solution becomes light blue/ paler // The intensity of blue copper(II) chloride solution decreases. [Reject colourless]	3
	<i>Able to describe the change in copper(II) chloride solution less correctly after 45 minutes.</i> Sample answer: The colour of copper(II) chloride solution becomes paler // The intensity of copper(II) chloride solution decreases.	2
	<i>Able to give any idea of the changes in copper(II) chloride solution after 45 minutes.</i> Sample answer: Light blue	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (e)	<i>Able to classify all the ions present in the copper(II) chloride solution accurately.</i> Sample answer: Positive ion: Copper(II) ion / $\text{Cu}^{2+}$ and hydrogen ion / $\text{H}^+$ Negative ion: hydroxide ion / $\text{OH}^-$ and chloride ion / $\text{Cl}^-$	3
	<i>Able to classify <b>any three ions</b> in the copper(II) chloride solution correctly.</i>	2
	<i>Able to classify <b>any two ions</b> in the copper(II) chloride solution correctly.</i>	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (f) (i)	<i>Able to write the discharge copper(II) ion correctly with direction</i>	3
	Sample answer: copper(II) ion are discharged from the solution // concentration of copper(II) ion decrease	
	<i>Able to write the ion discharge</i>	2
	Sample answer: copper(II) ion are discharged	
<i>Able to give an idea about ion discharge</i>	1	
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (f) (ii)	<i>Able to write the ionises of copper at anode and discharge of copper(II) ion at cathode correctly</i>	3
	Sample answer: P1: Copper are ionises at anode P2: copper(II) ion are discharged at cathode P3: concentration of copper(II) ion remain constant	
	<i>Able to write the ion discharge and ionises</i>	2
	Sample answer: P1: Copper ionises at anode P2: copper(II) ion are discharged at cathode	
<i>Able to give an idea about ionises and ion discharge</i>	1	
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (g) (i)	<p><i>Able to draw and labell the diagram correctly</i></p> <p>Silver plate Kepingan argentum</p> <p>Iron key Kunci besi</p> <p>Silver nitrate solution, <math>0.1 \text{ mol dm}^{-3}</math> Larutan argentum nitrat</p> <p><i>Review: in electroplating</i></p> <ul style="list-style-type: none"> <li>• Iron key is the cathode</li> <li>• Silver plate is the anode</li> <li>• Silver nitrate solution is the electrolyte with molarity</li> </ul>	3
	<i>Able to draw and labell a part of the diagram</i>	2
	<i>Able to give an idea about electroplating</i>	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (g) (ii)	<p><i>Able to write the observation at the key correctly</i></p> <p>Sample answer: The key will be coated with thin layer of silver</p>	3
	<p><i>Able to write the observation at the key</i></p> <p>Sample answer: The key will be coated</p>	2
	<i>Able to give an idea about electroplating</i>	1
	<i>No response or wrong response</i>	0

Question No.	Rubric	Score
1 (g) (iii)	<p><i>Able to write any one of these method completely:</i></p> <p>i) The key must be clean and free of grease</p> <p>ii) The concentration of silver nitrate must be low</p> <p>iii) The electric current must be small</p> <p>iv) The key must be turned steadily</p>	3
	<i>Able to write any one of these method</i>	2
	<i>Able to give an idea about electroplating</i>	1
	<i>No response or wrong response</i>	0

Soalan 2	Jawapan	Markah
a) Tujuan eksperimen	Untuk mengesahkan kehadiran ion klorida dan ion nitrat dalam larutan akueus garam masing-masing	3
	Untuk mengesahkan kehadiran anion dalam larutan akueus garam masing-masing	2
	Untuk mengesahkan kehadiran anion	1
	<i>Tiada jawapan atau jawapan salah</i>	0

b) Pemboleh ubah	MV: Jenis larutan garam // ion klorida dan ion nitrat // RV: Hasil tindak balas // pembentukan mendakan putih dan cincin perang CV: Anion // ion bercas negatif	3
	Dua pemboleh ubah betul	2
	Satu pemboleh ubah betul	1
	<i>Tiada jawapan atau jawapan salah</i>	0

c) Pernyataan hipotesis	Kehadiran ion klorida ditunjukkan dengan pembentukan mendakan putih argentum klorida manakala kehadiran ion nitrat ditunjukkan dengan pembentukan cincin perang.	3
	Kehadiran ion klorida ditunjukkan dengan pembentukan mendakan putih argentum klorida // kehadiran ion nitrat ditunjukkan dengan pembentukan cincin perang	2
	Kehadiran anion dalam larutan garam adalah hasil tindak balas yang terbentuk	1
	<i>Tiada jawapan atau jawapan salah</i>	0

d) Senarai bahan dan radas	Bahan: larutan argentum nitrat 1.0 mol dm <sup>-3</sup> , larutan natrium klorida 1.0 mol dm <sup>-3</sup> , asid nitrik 1.0 mol dm <sup>-3</sup> , asid sulfurik 1.0 mol dm <sup>-3</sup> , asid sulfurik pekat, larutan natrium nitrat 1.0 mol dm <sup>-3</sup> , larutan ferum (II) sulfat 1.0 mol dm <sup>-3</sup>	3
	Radas: tabung uji, penitis, silinder penyukat 5 ml, penyepit	
	Bahan: 6 bahan yang betul Radas: 3 radas yang betul	2
	Bahan: 2 bahan yang betul Radas: 1 radas yang betul	1
	<i>Tiada jawapan atau jawapan salah</i>	0

e) Prosedur	<p>Ujian ion klorida</p> <ol style="list-style-type: none"> <li>1. Sukat 2 ml larutan natrium klorida <math>1.0 \text{ mol dm}^{-3}</math> menggunakan silinder penyukat</li> <li>2. Tuangkan larutan tersebut ke dalam tabung uji</li> <li>3. Tambahkan 3 titis asid nitrik <math>1.0 \text{ mol dm}^{-3}</math> ke dalam tabung uji menggunakan penitis</li> <li>4. Sukat 2 ml larutan argenium nitrat <math>1.0 \text{ mol dm}^{-3}</math> menggunakan silinder penyukat dan tuangkan ke dalam tabung uji yang sama</li> <li>5. Buat pemerhatian dan rekodkan</li> </ol> <p>Ujian ion nitrat</p> <ol style="list-style-type: none"> <li>1. Sukat 2 ml larutan natrium nitrat <math>1.0 \text{ mol dm}^{-3}</math> menggunakan silinder penyukat</li> <li>2. Tuang larutan tersebut ke dalam tabung uji</li> <li>3. Dengan menggunakan penitis, tambahkan 3 titis asid sulfurik cair ke dalam tabung uji diikuti dengan 2ml larutan ferum (II) sulfat <math>1.0 \text{ mol dm}^{-3}</math> yang telah disukat isipadunya</li> <li>4. Goncang campuran supaya sekata</li> <li>5. Dengan berhati-hati, condongkan tabung uji dan tambahkan 3 titis asid sulfurik pekat. Jangan goncang tabung uji itu.</li> <li>6. Buat pemerhatian dan rekodkan</li> </ol>	3
	<p>Ujian ion klorida : Langkah 1, 2, 4, 5  Ujian ion nitrat : Langkah 1, 2, 3, 5, 6</p>	2
	<p>Ujian ion klorida : Langkah 1, 4, 5  Ujian ion nitrat : Langkah 1, 5, 6 @ 1, 3, 6</p>	1
	<i>Tiada jawapan atau jawapan salah</i>	0

f) Penjadualan data	<table border="1"> <thead> <tr> <th>Kehadiran ion @ anion // larutan garam akueus</th> <th>Hasil tindak balas // Pemerhatian</th> </tr> </thead> <tbody> <tr> <td>Ion klorida</td> <td></td> </tr> <tr> <td>Ion nitrat</td> <td></td> </tr> </tbody> </table>	Kehadiran ion @ anion // larutan garam akueus	Hasil tindak balas // Pemerhatian	Ion klorida		Ion nitrat		2
	Kehadiran ion @ anion // larutan garam akueus	Hasil tindak balas // Pemerhatian						
	Ion klorida							
Ion nitrat								
<p>SALAH SATU BETUL boleh beri skor 1</p> <table border="1"> <thead> <tr> <th>Kehadiran ion @ anion // larutan garam akueus</th> <th>Hasil tindak balas // Pemerhatian</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Kehadiran ion @ anion // larutan garam akueus	Hasil tindak balas // Pemerhatian					1	
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<i>Tiada jawapan atau jawapan salah</i>	0							