

4541/1  
Kimia  
Kertas 1  
2023



## MODUL GEMILANG SPM

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**KIMIA**

Kertas 2

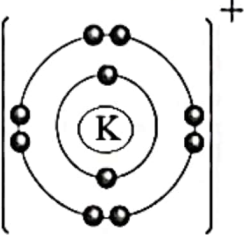
**PERATURAN PEMARKAHAN**

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**SKEMA JAWAPAN  
KERTAS 2  
BAHAGIAN A**

No	Answer scheme		Sub mark	Total mark
1	(a)	Natrium <i>Sodium</i>	1	1
	(b)	Logam alkali <i>Alkali metal</i>	1	1
	(c)	Elektrostatik <i>Electrostatic</i>	1	1
	(d)	Ion <i>Ionic</i>	1	1
	(e)	Natrium fluorida <i>Sodium fluoride</i>	1	1
<b>TOTAL</b>			<b>5</b>	

No	Answer scheme		Sub mark	Total mark
2	(a)	(i) Sabun ialah garam natrium atau kalium bagi asid lemak. <i>Soap is a sodium or potassium salts of fatty acid.</i>	1	1
		(ii) $\text{RCOO}^-\text{Na}^+ // \text{RCOO}^-\text{K}^+$	1	1
		(iii) Air berasid <i>Acidic water</i>	1	1
	(b)	(i) Nanoteknologi ialah pembangunan bahan atau peranti dengan memanfaatkan ciri-ciri zarah nano <i>Nanotechnology is a development of substances or gadgets using the properties of nanoparticles.</i>	1	1
		(ii) Zarah kecil bersaiz 1 – 100 nm <i>Small size particles of 1 – 100 nm</i>	1	1
<b>TOTAL</b>			<b>5</b>	

No	Answer scheme	Sub mark	Total mark
3	(a) Proton, neutron, elektron <i>Proton, neutron, electron</i>	1	1
	(b) Kumpulan 1 <i>Group 1</i>	1	1
	(c)   Nukleus dan cas yang betul – 1 <i>Correct nucleus and charge</i> Bilangan petala dan bilangan elektron yang betul – 1 <i>Correct number of shells and number of electrons</i>	2	2
	(d) Jisim atom relatif M = $\frac{79(24) + 10(25) + 11(26)}{100}$ <i>Relative atomic mass M</i> = 24.32	1  1	2
<b>TOTAL</b>			<b>6</b>

No	Answer scheme	Sub mark	Total mark
4	(a) Unsur-unsur yang terletak di antara Kumpulan 2 dan 13 dalam Jadual Berkala Unsur. <i>The elements located in between Group 2 and 13 in the Periodic Table of Elements.</i>	1	1
	(b) Bertindak sebagai mangkin <i>Acts as a catalyst</i>	1	1
	(c) (i) Perang <i>Brown</i>	1	1
	(ii) $2\text{Fe} + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3$ Formula kimia bahan dan tindak balas yang betul – 1 <i>Correct reactants and products formulae</i> Persamaan kimia yang seimbang – 1 <i>Balanced chemical equation</i>	1 1	2
	(iii) 2 mol Fe menghasilkan 2 mol FeCl <sub>3</sub> // 0.1 mol Fe menghasilkan 0.1 mol FeCl <sub>3</sub> 2 mol Fe <i>forms</i> 2 mol FeCl <sub>3</sub> // 0.1 mol Fe <i>forms</i> 0.1 mol FeCl <sub>3</sub>  Jisim FeCl <sub>3</sub> = 0.1 x 162.5 g // 16.25 g <i>Mass of FeCl<sub>3</sub> = 0.1 x 162.5 g // 16.25 g</i>  Nisbah mol yang betul – 1 <i>Correct mole ratio</i> Jawapan berserta unit yang betul – 1 <i>Correct answer with unit</i>	1  1	2
<b>TOTAL</b>			<b>7</b>

No	Answer scheme	Sub mark	Total mark												
5	(a) Formula kimia yang menunjukkan nisbah teringkas atom bagi setiap unsur dalam suatu sebatian. <i>Chemical formula that shows the simplest ratio of atoms of each element in a compound.</i>	1	1												
	(b) Kaedah II <i>Method II</i>	1	1												
	(c) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Kuprum <i>Copper</i></th> <th style="text-align: center;">Oksigen <i>oxygen</i></th> </tr> </thead> <tbody> <tr> <td>Jisim (g) <i>Mass (g)</i></td> <td style="text-align: center;">6.42</td> <td style="text-align: center;">1.61</td> </tr> <tr> <td>Bilangan mol <i>Number of mole</i></td> <td style="text-align: center;"><math>\frac{6.42}{64} = 0.1</math></td> <td style="text-align: center;"><math>\frac{1.61}{16} = 0.1</math></td> </tr> <tr> <td>Nisbah mol <i>Mole ratio</i></td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> </tr> </tbody> </table> <p>Formula empirik = CuO <i>Empirical formula</i></p>		Kuprum <i>Copper</i>	Oksigen <i>oxygen</i>	Jisim (g) <i>Mass (g)</i>	6.42	1.61	Bilangan mol <i>Number of mole</i>	$\frac{6.42}{64} = 0.1$	$\frac{1.61}{16} = 0.1$	Nisbah mol <i>Mole ratio</i>	1	1	1 1 1	3
		Kuprum <i>Copper</i>	Oksigen <i>oxygen</i>												
	Jisim (g) <i>Mass (g)</i>	6.42	1.61												
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Nisbah mol <i>Mole ratio</i>	1	1													
(d) Bilangan unit formula = $0.01 \times 6.02 \times 10^{23}$ <i>Number of formula unit</i> = $6.02 \times 10^{21}$	1	1													
(e) Kaedah I logam dibakar dalam udara/oksigen manakala Kaedah II logam oksida dibakar dalam gas hidrogen. <i>Method I the metal is burned in air/oxygen whereas Method II metal oxide is burned in hydrogen gas.</i> Kaedah I melibatkan logam yang lebih reaktif terhadap oksigen manakala Kaedah II melibatkan logam yang kurang reaktif daripada hidrogen. <i>Method I involves more reactive metal towards oxygen whereas Method II involves less reactive metal than hydrogen.</i>	1 1	2													
<b>TOTAL</b>			<b>8</b>												

No	Answer scheme	Sub mark	Total mark
6	(a) Aloi merupakan campuran dua atau lebih unsur yang mana unsur yang utama ialah logam. <i>Alloy is a mixture of two or more elements where the main element is a metal.</i>	1	1
	b Keluli <i>Steel</i>	1	1
	c $\begin{array}{ccccccc} & \text{H} & \text{H} & & \text{H} & & \\ &   &   & &   & & \\ \text{H} & - \text{C} = & \text{C} - & \text{C} = & \text{C} - & \text{H} & \\ & & & &   & & \\ & & & & \text{CH}_3 & & \end{array}$	1	1
	d. P1: Tambah alkali // larutan ammonia <i>Add alkali // ammonia solution</i> P2: Alkali // Larutan ammonia mengandungi ion OH <sup>-</sup> <i>Alkali // ammonia solution contains OH<sup>-</sup> ions.</i> P3: Boleh meneutralkan ion H <sup>+</sup> yang terhasil daripada bakteria. <i>Can neutralise the H<sup>+</sup> ions produced by bacteria.</i>	1 1 1	3
	e. Persamaan: kedua-dua bahan mengandungi unsur kuprum. <i>Similarity : Both substances contain copper element</i>  Perbezaan: <i>Differences:</i> Bahan A terdiri daripada logam tulen manakala bahan B merupakan aloi // <i>Substance A is made up from pure metal while substance B is alloy //</i> Bahan A lebih lembut daripada bahan B <i>Substance A is softer from substance B</i> Bahan A kelihatan kurang menarik daripada bahan B // <i>Substance A looks less attractive than substance B //</i> Bahan A kurang tahan kakisan daripada bahan B <i>Substance A is less resistance to corrosive than substance B</i>  dan sebaliknya // <i>vice versa</i>	1  1+1 mana- mana dua	3
<b>TOTAL</b>			<b>9</b>

No	Answer scheme	Sub mark	Total mark
7	(a) Haba yang terbebas/berubah apabila 1 mol logam disesarkan daripada larutan garamnya. <i>Heat release when 1 mol of metal is displaced from its salt solution</i>	1	1
	(b) Kuprum <i>Copper</i>	1	1
	(c)(i) $n = \frac{MV}{1000}$  $n = \frac{0.1(50)}{1000}$ $= 0.005$	1	1
	(c)(ii) $\Delta H = \frac{4620}{0.005}$  $= 924 \text{ kJmol}^{-1}$	1 1	2
	(d) Logam X: Aluminium // Zink // Ferum <i>Metal X: Aluminium // zinc // Iron</i> Aluminium/Zink/Ferum kurang elektropositif daripada magnesium. <i>Aluminium/Zinc/Iron is less electropositive than magnesium.</i> Tenaga haba yang dibebaskan lebih rendah. <i>Less heat energy is released.</i>	1 1 1	3
(f) Boleh // Wajar. <i>Yes.</i> Tindak balas ini eksotermik// Haba dibebaskan. <i>The reaction is exothermic // Heat is released.</i>  Tidak boleh // Tidak wajar. <i>No.</i> Haba yang dibebaskan tidak cukup untuk melegakan kesakitan. <i>The heat released is not enough to reduce pain.</i>	1 1 Atau 1 1	2	
<b>TOTAL</b>			<b>10</b>

No			Answer scheme	Sub mark	Total mark
8	(a)	(i)	Butena // but-2-ena <i>Butene // but-2-ene</i>	1	1
		(ii)	Larutan kalium manganate(VII) berrasid // Larutan kalium dikromat(VI) berasid <i>Acidified potassium manganate(VII) solution // Acidified potassium dichromate(VI) solution</i>	1	1
	(b)		Bil mol P = $\frac{14}{56} = 0.25$ mol <i>Mole of P</i>	1	3
			1 mol P menghasilkan 4 mol CO <sub>2</sub> <i>1 mol P forms 4 mol CO<sub>2</sub></i>	1	
		0.25 mol P menghasilkan 1 mol CO <sub>2</sub> <i>0.25 mol P forms 1 mol CO<sub>2</sub></i>	1		
(c)		Isi padu CO <sub>2</sub> = 1 x 24 = 24 dm <sup>3</sup> <i>Volume of CO<sub>2</sub> = 1 x 24 = 24 dm<sup>3</sup></i>	1		
		Persamaan: <i>Similarity:</i> Kedua-dua adalah sebatian hidrokarbon // <i>Both are hydrocarbons //</i>	1	2	
		Kedua-dua mempunyai 4 atom karbon // <i>Both contain 4 carbon atoms //</i>			
		Perbezaan: <i>Difference:</i> P ialah sebatian hidrokarbon tak tepu manakala R adalah sebatian hidrokarbon tepu // <i>P is an unsaturated hydrocarbon whereas R is saturated hydrocarbon //</i>	1		
		Sebatian P mengandungi ikatan kovalen ganda dua antara atom karbon manakala sebatian R mengandungi ikatan kovalen tunggal antara atom karbon // <i>Compound P contains double covalent bond between carbon atoms whereas compound R contains single covalent bond between carbon atoms //</i>			
		Sebatian P melunturkan warna perang air bromin manakala tiada perubahan kepada sebatian R // <i>Compound P decolourises brown bromine water whereas no changes for compound R //</i>			



		<p>Sebatian P melunturkan warna ungu larutan kalium manganat(VII) berasid manakala tiada perubahan kepada sebatian R //</p> <p><i>Compound P decolourises purple colour of acidified potassium manganate(VII) solution whereas no changes for compound R //</i></p> <p>Sebatian P menukarkan warna jingga larutan kalium dikromat(VI) berasid kepada hijau manakala tiada perubahan kepada sebatian R //</p> <p><i>Compound P turns the orange colour of acidified potassium dichromate(VI) solution to green whereas no changes for compound R //</i></p> <p>Pembakaran sebatian P menghasilkan lebih banyak jelaga berbanding sebatian R. //</p> <p><i>Combustion of compound P produces more soot compared to compound R</i></p>		
	(d)	<p>1. Tuangkan 2 cm<sup>3</sup> sebatian P dan sebatian R ke dalam dua tabung uji berlainan.</p> <p><i>Pour 2 cm<sup>3</sup> of compound P and compound R into two different test tubes.</i></p> <p>2. Tambahkan 3 titis air bromin / larutan kalium manganat(VII) berasid ke dalam kedua-dua tabung uji dan goncangkan.</p> <p><i>Add 3 drops of bromine water / acidified potassium manganate(VII) solution into both test tubes and shake.</i></p> <p>3. Sebatian P melunturkan warna perang air bromin manakala tiada perubahan kepada sebatian R. // Sebatian P menukarkan warna ungu larutan kalium manganat(VII) berasid kepada tak berwarna manakala tiada perubahan kepada sebatian R.</p> <p><i>Compound P decolourises brown bromine water whereas no changes for compound R // Compound P decolourises the purple colour of acidified potassium manganate(VII) solution whereas no changes for compound R</i></p>	1  1  1	3
			<b>Total</b>	<b>10</b>

## BAHAGIAN B

No	Answer scheme	Sub mark	Total mark
9	(a) 1. Kadar tindak balas ialah perubahan kuantiti bahan tindak balas / hasil tindak balas per unit masa. <i>Rate of reaction is the changes in the quantities of the reactant / product per unit time</i>	1	1
	2. Faktor: Saiz daging <i>Factor: Size of meat</i>	1	1
	3. Sebab: Jumlah luas permukaan lebih besar <i>Reason: Total surface area is larger</i>	1	2
	4. Lebih banyak permukaan daging terdedah kepada haba. <i>More surface of meat exposed to heat</i>	1	
(b)	(i) 1. Formula kimia bahan tindak balas dan hasil tindak balas yang betul. <i>Correct chemical formulae of the reaction's reactants and products</i>	1	6
	2. Persamaan kimia seimbang <i>Balanced chemical equation</i> $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$	1	
	3. Bil mol HCl = $\frac{2(5)}{1000} = 0.01$ mol <i>Mole of HCl</i>	1	
	4. 2 mol HCl menghasilkan 1 mol ZnCl <sub>2</sub> 0.01 mol HCl menghasilkan 0.005 mol ZnCl <sub>2</sub> 2 mol HCl produces 1 mol ZnCl <sub>2</sub> 0.01 mol HCl produces 0.005 mol ZnCl <sub>2</sub>	1	
	5. Jisim molar ZnCl <sub>2</sub> = 65 + 35.5(2) = 136 g mol <sup>-1</sup> <i>Molar mass of ZnCl<sub>2</sub></i>	1	
	6. Jisim ZnCl <sub>2</sub> = 0.005 x 136 g = 0.68 g <i>Mass of ZnCl<sub>2</sub></i>	1	

		<p>(ii) <b>Eksperimen I dan II</b> <i>Experiment I and II</i></p> <p>1. Kadar tindak balas Eksperimen II lebih tinggi berbanding Eksperimen I <i>Rate of reaction of Experiment II is higher than Experiment I</i></p> <p>2. Suhu larutan dalam Eksperimen II lebih tinggi berbanding Eksperimen I <i>Temperature of the solution in Experiment II is higher than Experiment I</i></p> <p>3. Tenaga kinetik zarah-zarah/ion hidrogen dalam Eksperimen II lebih tinggi berbanding Eksperimen I // Lebih banyak zarah bertenaga untuk mengatasi tenaga pengaktifan <i>Kinetic energy of the particles/hydrogen ion in Experiment II is higher than in Experiment I // More energetic particles to overcome the activation energy</i></p> <p>4. Frekuensi perlanggaran di antara atom zink dan ion hidrogen dalam Eksperimen II lebih tinggi berbanding Eksperimen I <i>Frequency of collision between zinc atoms and hydrogen ions in Experiment II is higher than in Experiment I</i></p> <p>5. Frekuensi perlanggaran berkesan di antara zarah-zarah dalam Eksperimen II lebih tinggi berbanding Eksperimen I <i>Frequency of effective collision between the particles in Experiment II is higher than in Experiment I</i></p> <p><b>Eksperimen II dan III</b> <i>Experiment II and III</i></p> <p>1. Kadar tindak balas Eksperimen III lebih tinggi berbanding Eksperimen II <i>Rate of reaction of Experiment III is higher than Experiment II</i></p> <p>2. Kehadiran mangkin / kuprum(II) sulfat dalam Eksperimen III <i>The presence of catalyst / copper(II) sulphate in Experiment III</i></p>	<p>10</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>
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			3. Mungkin menyediakan lintasan alternatif dengan merendahkan tenaga pengaktifan dalam Eksperimen III. <i>Catalyst provides an alternative path by lowering the activation energy in Experiment III</i>	1	
			4. Lebih banyak zarah-zarah berlanggar dapat mencapai tenaga pengaktifan yang lebih rendah dalam Eksperimen III <i>More colliding particles able to achieve the lower activation energy in Experiment III</i>	1	
			5. Frekuensi perlanggaran berkesan di antara atom zink dan ion hidrogen dalam Eksperimen III lebih tinggi berbanding Eksperimen II <i>Frequency of effective collision between zinc atoms and hydrogen ions in Experiment III is higher than Experiment II</i>	1	
				<b>Total</b>	<b>20</b>

No			Answer scheme	Sub mark	Total mark
10	(a)	(i)	1. Tenaga elektrik kepada tenaga kimia. // <i>Electrical energy to chemical energy.</i>	1	1
			2. Karbon P. // <i>Carbon P</i>	1	
			3. Karbon P disambung kepada terminal positif Sel II // Tindak balas pengoksidaan berlaku di karbon P. <i>Carbon P is connected to the positive terminal of Cell II // Oxidation reaction occurs at carbon P</i>	1	2
	(ii)		1. Setengah persamaan di anod: $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}$ <i>Half equation at anode:</i>	1	1
			2. Setengah persamaan di katod: $2\text{H}^+ + 2\text{e} \rightarrow \text{H}_2$ <i>Half equation at cathode:</i>	1	1
			3.		
			<i>Anod / Anode</i>	<i>Katod / Cathode</i>	
			Gelembung gas terhasil // Gas kuning-kehijauan terbebas // Gas berbau sengit terbebas // <i>Gas bubbles released // Greenish-yellow gas released // Gas with a pungent smell is released</i>	Gelembung gas tak berwarna terhasil <i>Colourless gas bubbles released</i>	1 + 1
			Ion klorida dan ion hidroksida bergerak/tertarik ke anod <i>Chloride ion and hydroxide ion move / are attracted to anode</i>	Ion hidrogen bergerak / tertarik ke katod <i>Hydrogen ion move / are attracted to cathode</i>	1 + 1
			Kepekatan ion klorida lebih tinggi berbanding ion hidroksida. <i>The concentration of chloride ion is higher than hydrogen ion</i>	Hanya ion hidrogen hadir di katod <i>Only hydrogen ions are present at cathode</i>	1 + 1

		<p>Ion klorida dinyahcas dengan membebaskan elektron membentuk molekul klorin. <i>Chloride ions are discharged by releasing electrons to form chlorine molecules</i></p>	<p>Ion hidrogen dinyahcas dengan menerima elektron membentuk molekul hidrogen <i>Hydrogen ions are discharged by accepting electrons to form hydrogen molecules</i></p>	1 + 1	8
(b)	(i)	<p>Membenarkan ion-ion mengalir <i>To allow the flow of ions</i></p>		1	1
	(ii)	<p><math>Zn (p) \mid Zn^{2+} (ak) \parallel Cu^{2+} (ak) \mid Cu (p)</math></p> <p>Elektrod dan elektrolit yang betul <i>Correct electrode and electrolyte</i></p> <p>Susunan anod dan katod serta tanda   <i>Anode and cathode arrangement and the symbol</i></p> <p>Voltan sel, <math>E^0_{sel} = +0.34 - (-0.76)</math> <i>Sel voltage, <math>E^0_{cell} = +1.10 V</math></i></p>		1 1 1 1	2 2
	(iii)	<p>Voltan sel, <math>E^0_{sel} = +0.34 - (-2.38)</math> <i>Sel voltage, <math>E^0_{cell} = +2.72 V //</math></i></p> <p>Lebih besar daripada +1.10 V // <i>Higher than +1.10 V</i></p> <p>Semakin besar perbezaan nilai keupayaan elektrod di antara magnesium dan kuprum/pasangan logam, semakin besar nilai voltan // <i>The larger the difference in value of electrode potential between magnesium and copper/pair of metals, the larger the voltage value</i></p>		1  1	2
<b>TOTAL</b>					<b>20</b>

## BAHAGIAN C

No	Answer scheme		Sub mark	Total mark
11	(a)	<p>Nilai pH alkali P lebih rendah daripada alkali Q <i>The pH value of alkali P is lower than alkali Q</i></p>	1	5
		<p>P ialah alkali lemah manakala Q ialah alkali kuat. <i>P is a weak alkali whereas Q is a strong alkali.</i></p>	1	
		<p>Alkali P mengion separa dalam air manakala alkali Q mengion lengkap dalam air. <i>Alkali P ionizes partially in water whereas alkali Q ionizes completely in water</i></p>	1	
		<p>Kepekatan ion hidroksida dalam alkali P lebih rendah manakala kepekatan ion hidroksida dalam alkali Q lebih tinggi <i>The concentration of hydroxide ion in alkali P is lower whereas the concentration of hydroxide ion in alkali Q is higher.</i></p>	1	
		<p>Semakin rendah kepekatan ion hidroksida dalam alkali P, semakin rendah nilai pH // Semakin tinggi kepekatan ion hidroksida dalam alkali Q, semakin tinggi nilai pH. <i>The lower the concentration of hydroxide ion in alkali P, the lower the pH value. // The higher the concentration of hydroxide ion in alkali Q, the higher the pH value.</i></p>	1	
(b)	(i)	<p>Tindak balas di antara asid dan alkali untuk menghasilkan garam dan air. <i>The reaction between an acid and an alkali to produce salt and water.</i></p>	1	1
	(ii)	<p>Formula kimia bahan tindak balas dan hasil tindak balas yang betul. <i>Correct chemical formula for the reactants and the products</i></p> <p>Persamaan kimia seimbang <i>Balanced chemical equation</i></p> $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$ <p>Bil mol NaOH = <math>\frac{(1.0)(25)}{1000} = 0.025</math> mol <i>Mole of NaOH</i></p> <p>2 mol NaOH → 1 mol H<sub>2</sub>SO<sub>4</sub> 0.025 mol NaOH → 0.0125 mol H<sub>2</sub>SO<sub>4</sub></p>	1	1

	$M \text{ H}_2\text{SO}_4 = \frac{0.0125 (1000)}{20} = 0.625 \text{ mol dm}^{-3}$ <p>Jawapan alternatif: <i>Alternative answer:</i></p> $\frac{M_a (20)}{(1)(25)} = \frac{1}{2}$ $M_a = 0.625 \text{ mol dm}^{-3}$	1	5
(c)	Garam X: kuprum(II) karbonat <i>Salt X: copper(II) carbonate</i>	1	
	Pepejal hitam: kuprum(II) oksida <i>Black solid: copper(II) oxide</i>	1	2
(d)	1. Larutan kalsium nitrat / kalsium klorida <i>Calcium nitrate solution / calcium chloride solution</i>	1	
	2. Larutan natrium sulfat / kalium sulfat <i>Sodium sulphate solution / potassium sulphate solution</i>	1	
	3. Sukat dan tuangkan 50 cm <sup>3</sup> larutan kalsium nitrat / kalsium klorida ke dalam sebuah bikar. <i>Measure and pour 50 cm<sup>3</sup> of calcium nitrate solution / calcium chloride solution into a beaker</i>	1	
	4. Sukat dan tuangkan 50 cm <sup>3</sup> larutan natrium sulfat / kalium sulfat ke dalam bikar yang sama. <i>Measure and pour 50 cm<sup>3</sup> of sodium sulphate solution / potassium sulphate solution into the same beaker</i>	1	
	5. Kacaukan campuran menggunakan rod kaca <i>Stir the mixture using a glass rod</i>	1	
	6. Turaskan campuran <i>Filter the mixture</i>	1	
	7. Bilaskan baki turasan dengan air suling <i>Rinse the residue/precipitate using distilled water</i>	1	
	8. Tekankan kalsium sulfat / mendakan di antara dua kertas turas. <i>Press calcium sulphate/the precipitate between two filter papers</i>	1	8
		<b>Total</b>	<b>20</b>

– SKEMA JAWAPAN TAMAT –