



MPP3
PEPERIKSAAN PERCUBAAN SPM 2021
4541/3 CHEMISTRY Paper 3

Soalan 1 / Question 1
15 markah / 15 marks

No. Soalan Question Number	Rubrik Rubric	Markah Marks																		
1	<p>(a) Menyatakan semua pemerhatian dan inferens yang sepadan dengan tepat <i>Able to state all the observations and corresponding inferences correctly</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Jenis logam <i>Type of Metal</i></th> <th style="text-align: center;">Pemerhatian <i>Observation</i></th> <th style="text-align: center;">Inferens <i>Inference</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Magnesium// Mg <i>Magnesium// Mg</i></td> <td>Larutan biru kuprum(II) sulfat menjadi pudar <i>Blue solution of copper (II) sulphate solution become paler/ colorless</i></td> <td>Kepekatan ion Cu²⁺ berkurang// Tindakbalas penyesaran berlaku <i>The concentration of Cu²⁺ ion decrease// Displacement reaction occur</i></td> </tr> <tr> <td></td> <td>Pepejal perang terenalap <i>Brown solid deposited</i></td> <td>Atom Cu terhasil <i>Cu atom is produced</i></td> </tr> <tr> <td style="text-align: center;">Zink //Zn <i>Zinc //Zn</i></td> <td>Larutan biru kuprum (II) sulfat menjadi pudar <i>Blue solution of copper (II) sulphate solution become paler/ colorless</i></td> <td>Kepekatan ion Cu²⁺ berkurang// Tindakbalas penyesaran berlaku <i>The concentration of Cu²⁺ ion decrease// Displacement reaction occur</i></td> </tr> <tr> <td></td> <td>Pepejal perang terenalap <i>Brown solid deposited</i></td> <td>Atom Cu terhasil <i>Cu atom is produced</i></td> </tr> <tr> <td style="text-align: center;">Kuprum // Cu <i>Copper // Cu</i></td> <td>Tiada perubahan <i>No change</i></td> <td>Tiada tindakbalas// Tindakbalas penyesaran tidak berlaku <i>No reaction// Displacement reaction does not occur</i></td> </tr> </tbody> </table>	Jenis logam <i>Type of Metal</i>	Pemerhatian <i>Observation</i>	Inferens <i>Inference</i>	Magnesium// Mg <i>Magnesium// Mg</i>	Larutan biru kuprum(II) sulfat menjadi pudar <i>Blue solution of copper (II) sulphate solution become paler/ colorless</i>	Kepekatan ion Cu ²⁺ berkurang// Tindakbalas penyesaran berlaku <i>The concentration of Cu²⁺ ion decrease// Displacement reaction occur</i>		Pepejal perang terenalap <i>Brown solid deposited</i>	Atom Cu terhasil <i>Cu atom is produced</i>	Zink //Zn <i>Zinc //Zn</i>	Larutan biru kuprum (II) sulfat menjadi pudar <i>Blue solution of copper (II) sulphate solution become paler/ colorless</i>	Kepekatan ion Cu ²⁺ berkurang// Tindakbalas penyesaran berlaku <i>The concentration of Cu²⁺ ion decrease// Displacement reaction occur</i>		Pepejal perang terenalap <i>Brown solid deposited</i>	Atom Cu terhasil <i>Cu atom is produced</i>	Kuprum // Cu <i>Copper // Cu</i>	Tiada perubahan <i>No change</i>	Tiada tindakbalas// Tindakbalas penyesaran tidak berlaku <i>No reaction// Displacement reaction does not occur</i>	<p>1+1</p> <p>1+1</p> <p>1+1</p>
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No. Soalan Question Number	Rubrik Rubric	Markah Marks
(b)	<p>Menyatakan semua pembolehubah dengan tepat <i>Able to state all the three variables correctly;</i></p> <p><u>Contoh jawapan:</u> <u>Sample answer:</u></p> <p>Pembolehubah dimanipulasi: Jenis logam// Mg, Zn, Cu <i>Manipulated variable : Type of metal// Mg, Zn, Cu</i></p> <p>Pembolehubah bergerakbalas : Perubahan warna larutan CuSO₄// Tindakbalas penyesaran <i>Responding variable: Color change of CuSO₄ solution// Displacement reaction</i></p> <p>Pembolehubah dimalarkan : Larutan CuSO₄// Kepekatan larutan CuSO₄ <i>Fixed variable: Copper (II) sulphate solution // Concentration of copper (II) sulphate solution</i></p>	3
	<p>Menyatakan sekurang-nya dua pembolehubah dengan tepat <i>Able to state any two variables correctly;</i></p>	2
	<p>Menyatakan sekurang-nya satu pembolehubah dengan tepat <i>Able to state any one variables correctly;</i></p>	1
	<p>Tiada jawapan atau Jawapan salah <i>No response or wrong response</i></p>	0
(c)	<p>Menyatakan hubungan antara pembolehubah dimanipulasai dan pembolehubah bergerakbalas dan arah dengan tepat. <i>Able to state the relationship between the manipulated variable and the responding variable with direction correctly</i></p> <p><u>Contoh jawapan:</u> <u>Sample answer:</u></p> <p>Logam Mg dan Zn dapat menyesarkan logam Cu dari larutan CuSO₄ manakala Logam Cu tidak. <i>Mg and Zn metal can displace Cu metal from CuSO₄ solution while Cu metal cannot</i></p>	2
	<p>Menyatakan hubungan antara pembolehubah dimanipulasai dan pembolehubah bergerakbalas</p>	

No. Soalan Question Number	Rubrik Rubric	Markah Marks
	<p><i>Able to state the relationship between the manipulated variable and the responding variable</i></p> <p><u>Contoh jawapan :</u> <u>Sample answer:</u></p> <ol style="list-style-type: none"> 1. Mg dan Zn dapat menyesarkan Cu dari larutan CuSO₄// <i>Mg and Zn can displace Cu from CuSO₄ solution</i> 2. Tindakbalas penyesaran berlaku apabila larutan CuSO₄ ditambahkan dengan Mg dan Zn// <i>Displacement reaction occur when CuSO₄ solution is added with Mg and Zn</i> 	1
	<p>Tiada jawapan atau Jawapan salah <i>No response or wrong response</i></p>	0
(d)	<p>Menyatakan ramalan dan penerangan tindakbalas dengan tepat. <i>Able to predict the reaction and give the reason correctly</i></p> <p><u>Jawapan:</u> <u>Answer:</u></p> <p>Tindakbalas berlaku <i>Reaction occur.</i></p> <p>Nilai E⁰ Cu lebih positif berbanding Pb // Nilai E⁰ Pb lebih negatif berbanding Cu// <i>E⁰ value of Cu is more positive than Pb // E⁰ value of Pb is more negative than Cu</i></p>	1 1
	<p>Menyatakan ramalan atau penerangan tindakbalas dengan tepat. <i>Able to predict the reaction or give the reason correctly</i></p> <p><u>Contoh jawapan:</u> <u>Sample answer:</u></p> <ol style="list-style-type: none"> 1. Tindakbalas berlaku// <i>Reaction occur</i> 2. Nilai E⁰ Pb lebih negatif berbanding Cu// <i>E⁰ value of Pb is more negative than Cu</i> 3. Nilai E⁰ Cu lebih positif berbanding Pb <i>E⁰ value of Cu is more positive than Pb</i> 	1
	<p>Tiada jawapan atau Jawapan salah <i>No response or wrong response</i></p>	0
(e)	<p>Menulis persamaan kimia yang seimbang dengan tepat. <i>Able to write the balanced chemical equation correctly</i></p>	

No. Soalan Question Number	Rubrik Rubric	Markah Marks
	<p><u>Contoh jawapan:</u> <u>Sample answer:</u></p> <p>1. $\text{Mg} + \text{CuSO}_4 \rightarrow \text{MgSO}_4 + \text{Cu}$</p> <p>2. $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$</p>	2
	<p>Menulis idea bagi persamaan kimia <i>Able to write an idea of the chemical equation</i></p> <p><u>Contoh jawapan:</u> <u>Sample answer:</u></p> <p>$\text{Mg} + \text{CuSO}_4 \rightarrow \text{MgSO}_4 + \text{Cu}^{2+}$</p>	1
	<p>Tiada jawapan atau Jawapan salah <i>No response or wrong response</i></p>	0
	Jumlah / total	15

END OF MARKING SCHEME