

Skema Markah Kimia Kertas 3 PPT 2016

No. Soalan	Rubrik	Skor
1 (a)	Able to state three variables correctly	3
	Name of variables: (i) Manipulated variable : Types of materials / block // copper and bronze block	
	(ii) Responding variable : Diameter of dent // hardness of the block	
	(iii) Controlled variable : Height of the weight // Mass of the weight // Diameter / size of steel ball bearing	
	Able to state two variables correctly	2
	Able to state one of the above variable	1
	No response or wrong response	0
1(b)	Able to state the relationship between the manipulated variable and the responding variable with correct direction. <u>Sample answer:</u> If the copper block is used, the diameter of the dent is bigger, If the bronze block is used, the diameter of the dent is smaller	3
	Able to state the relationship between the manipulated variable and responding variable but less accurate in stating the direction. <u>Sample answer:</u> Bronze is harder than copper // Copper is less harder than bronze If the copper block is used, the diameter of the dent is bigger// If the bronze block is used, the diameter of the dent is smaller // The harder the metal block, the smaller the diameter of the dent // If the metal block is hard, the diameter of the dent is smaller // The diameter of the dent is bigger when the copper block is used // The diameter of the dent is smaller when the bronze block is used	2
	Able to give an idea of hypothesis <u>Sample answer:</u> Different block produces different diameter of the dent	1
	No response or wrong response	0

1(c)	Able to state two inference correctly <u>Sample answer:</u> The bronze is harder than the copper Copper is less harder than bronze	3						
	Able to state two inference less correctly//one inference correctly <u>Sample answer:</u> The bronze is harder//the hardness of bronze is higher//copper is less harder	2						
	Able to give idea on inference <u>Sample answer:</u> Diameter of dent on copper block is 3.50mm//diameter of dent on bronze block is 2.50mm//the hardness of the blocks is different	1						
	No response or wrong response	0						
1 (d)	Able to give the operational definition of alloy correctly <u>Sample answer:</u> Bronze block formed a smaller diameter of the dent when the 1kg weight is dropped on to it // When the 1kg weight is dropped on the bronze block a smaller diameter of the dent is formed	3						
	Able to state the operational definition less correctly <u>Sample answer:</u> A smaller dent is formed on the bronze block .	2						
	Able to state an idea for the rusting of iron <u>Sample answer:</u> Copper and bronze block produces different diameter of the dent.	1						
	No response or wrong response	0						
1(e)	Able to classify all three materials correctly Answer: <table border="1"> <tbody> <tr> <td>Metals</td> <td>Alloys</td> </tr> <tr> <td>Tin</td> <td>Duralumin</td> </tr> <tr> <td></td> <td>Brass</td> </tr> </tbody> </table>	Metals	Alloys	Tin	Duralumin		Brass	3
	Metals	Alloys						
	Tin	Duralumin						
		Brass						
	Able to classify any two materials correctly	2						
Able to classify any one materials correctly [score 1; reverse order]	1							
No response or wrong response	0							

1(f)	Able to state the observation correctly <u>Sample answer</u> Iron steel spoon/alloy is not rust/corrodes but iron spoon/ pure metal rust/corrodes	3									
	Able to state the observation less accurate <u>Sample answer</u> Alloy is not rust //Pure metal rust	2									
	Able to state an idea Iron spoon rust.//rusting occurs	1									
	No response or wrong response	0									
2(a)	Able to state the observation and corresponding infences correctly <u>Sample answer:</u>	3									
	<table border="1"> <thead> <tr> <th>Test tube</th> <th>Observation</th> <th>Inference</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>-</td> <td>No reaction</td> </tr> <tr> <td>B</td> <td>Bubbles of gas produced</td> <td>Hydrogen gas releases</td> </tr> </tbody> </table>		Test tube	Observation	Inference	A	-	No reaction	B	Bubbles of gas produced	Hydrogen gas releases
	Test tube		Observation	Inference							
	A		-	No reaction							
	B	Bubbles of gas produced	Hydrogen gas releases								
	Able to state any two answer correctly	2									
	Able to state any one answer correctly	1									
No response given / wrong response	0										
2(b)	Able to give the meaning of acid correctly <u>Sample answer:</u> Substance that produced hydrogen gas when reacts with zinc in the present of water.	3									
	Able to give the meaning of acid. <u>Sample answer:</u> Substance that ionize/dissolve in water to produce hydrogen ion // substance that produce (hydrogen gas) / bubbles when reacts with zinc.	2									
	Able to give an idea of acid <u>Sample answer:</u> Substance that change blue litmus paper to red // substance that has pH value lower than 7.	1									
	No response given / wrong response	0									

2 ©	Able to explain the role of water correctly <u>Sample answer:</u> Water can ionise/dissociate acid to form hydrogen ion	3
	Able to explain the role of water less accurately <u>Sample answer:</u> Water can ionise/dissociate acid // water can produce hydrogen ion.	2
	Able to give an idea of the role of water. <u>Sample answer:</u> To show the acidity of acid.	1
	No response given / wrong response	0
2(d)	Able to write the name of any two products correctly <u>Sample answer:</u> 1. Zinc ethanoate 2. Carbon dioxide 3. Water	3
	Able to write the name of any one product correctly or any two products less accurately <u>Sample answer:</u> 1. zinc ethanoate // carbon dioxide // water 2. CO ₂ and H ₂ O // (CH ₃ COO) ₂ Zn and CO ₂ // (CH ₃ COO) ₂ Zn and H ₂ O	2
	Able to state an idea of the product. <u>Sample answer:</u> (CH ₃ COO) ₂ Zn // CO ₂ // H ₂ O	1
	No response given / wrong response	0

2(e)	<p>Able to classify all the acids correctly</p> <p>Sample answer:</p> <table border="1"> <thead> <tr> <th>Strong acid</th> <th>Weak acid</th> </tr> </thead> <tbody> <tr> <td>Hydrochloric acid, HCl</td> <td>Phosphoric acid , H₃PO₄</td> </tr> <tr> <td>Nitric acid, HNO₃</td> <td>Carbonic acid, H₂CO₃</td> </tr> <tr> <td>Sulphuric acid, H₂SO₄</td> <td>Methanoic acid, HCOOH</td> </tr> </tbody> </table>	Strong acid	Weak acid	Hydrochloric acid, HCl	Phosphoric acid , H ₃ PO ₄	Nitric acid, HNO ₃	Carbonic acid, H ₂ CO ₃	Sulphuric acid, H ₂ SO ₄	Methanoic acid, HCOOH	3								
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	<p>Able to classify any four acids correctly</p>	2																
	<p>Able to classify any two acids correctly or give opposite heading</p> <p>Sample answer:</p> <table border="1"> <thead> <tr> <th>Weak acid</th> <th>Strong acid</th> </tr> </thead> <tbody> <tr> <td>Hydrochloric acid. HCl</td> <td>Phosphoric acid , H₃PO₄</td> </tr> <tr> <td>Nitric acid, HNO₃</td> <td>Carbonic acid, H₂CO₃</td> </tr> <tr> <td>Sulphuric acid, H₂SO₄</td> <td>Methanoic acid, HCOOH</td> </tr> </tbody> </table> <p style="text-align: center;"><i>Or</i></p> <table border="1"> <thead> <tr> <th>Weak acid</th> <th>Strong acid</th> </tr> </thead> <tbody> <tr> <td>Phosphoric acid , H₃PO₄</td> <td>Hydrochloric acid. HCl</td> </tr> <tr> <td>Carbonic acid, H₂CO₃</td> <td>Nitric acid, HNO₃</td> </tr> <tr> <td>Methanoic acid, HCOOH</td> <td>Sulphuric acid, H₂SO₄</td> </tr> </tbody> </table>	Weak acid	Strong acid	Hydrochloric acid. HCl	Phosphoric acid , H ₃ PO ₄	Nitric acid, HNO ₃	Carbonic acid, H ₂ CO ₃	Sulphuric acid, H ₂ SO ₄	Methanoic acid, HCOOH	Weak acid	Strong acid	Phosphoric acid , H ₃ PO ₄	Hydrochloric acid. HCl	Carbonic acid, H ₂ CO ₃	Nitric acid, HNO ₃	Methanoic acid, HCOOH	Sulphuric acid, H ₂ SO ₄	1
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	No response given / wrong response	0																

3(a)	Able to give the statement of problem correctly. <u>Sample answer:</u> Does the type of electrodes (anode) affect the type of products formed during the electrolysis?	3
	Able to give the statement of problem. Sample answer: The type of electrodes (anode) affect the type of products formed.	2
	Able to give an idea. Sample answer: The products formed are different	1
	No response or wrong response	0
3(b)	Able to state all variables correctly. Sample answer: Manipulated variable: type of electrodes/anode //carbon electrode, copper electrode. Responding variable: products formed at the anode. Fixed variable: electrolyte/ copper(II) sulphate solution	3
	Able to state any two variables correctly.	2
	Able to state any one variable correctly.	1
	No response or wrong response	0
3(c)	Able to state the hypothesis correctly. Sample answer: When copper electrodes are used instead of carbon electrodes, the type of product formed at anode is different.	3
	Able to state the hypothesis. Sample answer: Different electrode/ anode will produce different product.	2
	Able to give an idea Sample answer: Different electrode/ anode affect the product.	1
	No response or wrong response	0
3(d)	Able to list completely the materials and apparatus. Sample answer: Materials: 1. 0.1 mol dm ⁻³ copper(II) sulphate, CuSO ₄ solution Apparatus: 2. Batteries 3. Connecting wire 4. Carbon electrodes 5. Copper electrodes 6. Electrolytic cell 7. Wooden splinter 8. Test tube	3

	<p>Able to list completely the materials and apparatus.</p> <p>Sample answer:</p> <p>Materials:</p> <ol style="list-style-type: none"> 0.1 mol dm⁻³ copper(II) sulphate, CuSO₄ solution Apparatus: Carbon electrodes Copper electrodes Electrolytic cell 	2
	<p>Able to give an idea.</p> <p>Sample answer:</p> <p>Materials:</p> <ol style="list-style-type: none"> Electrolyte Apparatus: Batteries Carbon electrodes / Copper electrodes Container 	1
	No response or wrong response	0
3(e)	<p>Able to state all the steps correctly.</p> <p>Sample answer:</p> <ol style="list-style-type: none"> Pour the copper(II) sulphate solution into the electrolytic cell. A test tube filled with copper(II) sulphate solution is inverted at the anode carbon. Turn on the switch and carried out the electrolysis for several minutes Test a gas collected and record the observation. Repeat steps 1-4 using copper electrodes to replace carbon electrodes. 	3
	Able to state steps 1, 2,3/ 4.	2
	Able to state steps 1,2/3/4/5.	1
	No response or wrong response	0

3(f)	<table border="1"> <thead> <tr> <th>Type of electrodes</th> <th>Observation at anode</th> </tr> </thead> <tbody> <tr> <td>Carbon</td> <td></td> </tr> <tr> <td>Copper</td> <td></td> </tr> </tbody> </table> <p>Able to tabulate the data with the following aspects</p> <ol style="list-style-type: none"> 1. Correct titles 2. List of electrodes 	Type of electrodes	Observation at anode	Carbon		Copper		2
	Type of electrodes	Observation at anode						
Carbon								
Copper								
<table border="1"> <thead> <tr> <th></th> <th>Observation at anode</th> </tr> </thead> <tbody> <tr> <td>Carbon/copper</td> <td></td> </tr> </tbody> </table> <p>Able to tabulate the data but incomplete</p>		Observation at anode	Carbon/copper		1			
	Observation at anode							
Carbon/copper								
	No response or wrong response	0						