

MODUL KECEMERLANGAN BERFOKUS SPM NEGERI JOHOR 2018

Skema Kertas 3 Set 2

1(a)	Correct reading with correct decimal places and unit		3
	Vulcanised rubber		
	Before experiment	4.0 cm	
	During experiment	4.6 cm	
	After experiment	4.0 cm	
	Unvulcanised rubber		
Before experiment	4.0 cm		
During experiment	6.4 cm		
After experiment	5.8 cm		
	One mistakes in reading		2
	Two mistakes in reading		1
	More than two mistakes		0

1(b)	Type of rubber		Length of rubber / cm		3
		Vulcanised rubber	unvulcanised rubber		
	Before experiment	4.0	4.0		
	During experiment	4.6	6.4		
	After experiment	4.0	5.8		
	One mistakes in the table				2
	Two mistakes in table				1
	More than two mistakes				0

1(c)(i)	Correct observation The vulcanised rubber return to the original length OR The unvulcanised rubber does not return to the original length	3
	Slight mistake in the observation Example The unvulcanised rubber expand longer than the unvulcanised rubber	2
	More mistakes in the observation The vulcanised rubber is more elastic than unvulcanised rubber	1
	Wrong response	0

1(c)(ii)	Correct inference The vulcanised rubber is more elastic than unvulcanised rubber	3
	Slight mistakes in inference given The vulcanised rubber is elastic whereas the unvulcanised is not elastic	2
	More mistakes in inference given The vulcanised cannot expand too long whereas the unvulcanised rubber can expand very long	1
	Wrong response	0

1(d)	Correct variables are given MV : type of rubber RV : elasticity CV : Size of rubber / length of rubber	3
	One mistakes in variables given	2
	Two mistakes in variables given	1
	Wrong response	0

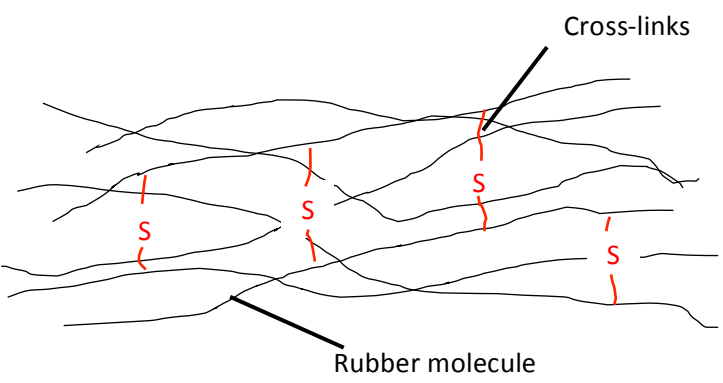
1(e)	Correct hypothesis Vulcanised rubber is more elastic than unvulcanised rubber OR Unvulcanised rubber is more elastic than vulcanised rubber	3
	Slight mistakes in hypothesis given Vulcanised rubber is more elastic	2
	More mistakes in hypothesis are given unvulcanised rubber expand more than unvulcanised rubber	1
	Wrong response	0

1(f)	Correct operational definition is given When rubber strips are hanged with weight and the released the rubber that return to the original length is more elastic	3
	Slight mistakes in operational definition is given When rubber strips are hanged with weight the rubber that return to the original length is more elastic When rubber strips are hanged the rubber that return to the original length is more elastic	2
	More mistakes in operational definition is given Rubber that return to the original length is more elastic	1
	Wrong response	0

1(g)	Correct relationship given The heavier the mass of weight hanged to the vulcanised rubber strip, the longer the length of rubber	3
	Slight mistakes in the relationship given The heavier the mass of weight hanged, the longer the length of rubber	2
	More mistakes in the relationship given The mass of weight hanged will make rubber longer	1
	Wrong response	0

1(h)	Correct prediction with correct decimal places and unit 4.0 cm	3
	Correct prediction with incorrect decimal places or unit 4.0 4 cm	2
	Correct prediction with more mistakes OR almost correct prediction 4 4.1 cm	1
	Wrong response	0

1(i)	All correct classification	3		
	<table border="1"> <tr> <td>substance that coagulate latex</td> <td>substance that does not coagulate latex</td> </tr> <tr> <td>Hydrochloric acid asetic acid</td> <td>Sodium hydroxide solution ammonia solution</td> </tr> </table>		substance that coagulate latex	substance that does not coagulate latex
substance that coagulate latex	substance that does not coagulate latex			
Hydrochloric acid asetic acid	Sodium hydroxide solution ammonia solution			
	One mistakes in classifying	2		
	Two mistakes in classifying	1		
	Wrong response	0		

1(j)	<p>Correct diagram drawn</p> 	3
	No cross-links OR Sulphur bridge OR rubber molecule is labelled	2
	More mistakes in diagram	1
	Wrong response	0

2(a)	Correct problem statement is given	3	
	What is the effect of concentration of [electrolyte] to the product at anode during electrolysis?		
	Slight mistakes in problem statement		2
	What is the effect of concentration to the product at anode?		
More mistakes in problem statement	1		
What is produced at anode?			
	Wrong response	0	
	How to study the effect of concentration of [electrolyte] to the product at anode during electrolysis?		

2(b)	All variables given correctly	3
	MV : Concentration of [sodium chloride] solution	
	RV : Products at anode	
	FV : Type of electrolyte / Type of electrodes	
	One mistakes in variables given	2
	Two mistakes in variables given	1
	Wrong response	0

2(c)	Correct hypothesis is given When the concentration of sodium chloride solution is [0.5 mol dm ⁻³], chlorine gas is produced at anode whereas when the concentration of sodium chloride solution is 0.001 mol dm ⁻³ , oxygen gas is produced at anode is oxygen gas	3
	Less hypothesis is given When the concentration is high chlorine gas is produced whereas when concentration is low oxygen gas is produced	2
	Ideas of hypothesis is given The gas produced at anode depends on the concentration of [sodium chloride solution]	1
	Wrong response	0

2(d)	The following list are given Apparatus : Beaker, connecting wire, carbon electrodes, Batteries, bunsen burner Materials : [sodium chloride solution – 0.1 to 2.0 mol dm ⁻³] , wooden splinter, litmus paper	3
	One mistakes in apparatus or materials Example : concentration is not given	2
	More mistakes in apparatus or materials Example : Name of solution is not given anywhere in the student's answer	1
	Wrong response	0

2(e)	Correct procedure given Procedure : 1. Pour [0.1 – 2.0] of mol dm ⁻³ of [sodium chloride solution] in a beaker 2. Connect carbon electrodes to the batteries 3. Dip the carbon electrodes into the solution 4. Place a damp blue litmus paper to the gas 5. Place a glowing wooden splinter near the gas 6. Record the observation at anode 7. Repeat experiment using 0.001 of mol dm ⁻³ of [sodium chloride solution] in a beaker	3
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	One mistakes in procedure given	2
	Two mistakes in procedure given	1
	Wrong response	0

2(f)	Correct table given		2	
	Concentration of electrolyte / mol dm ⁻³	Observations an anode		
		Damp blue litmus paper		Glowing wooden splinter
	0.2			
0.001				
	One mistakes in table given		1	
	Wrong response		0	