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MODUL PINTAS TINGKATAN 5

Peperiksaan Percubaan Tahun 2019

Skema Jawapan Chemistry

Kertas 3 4541/3

4541/3

PEPERIKSAAN PERCUBAAN SPM 2019
TINGKATAN 5
KIMIA   4541/3
Kertas 3
Ogos

SKEMA JAWAPAN MODUL PINTAS KIMIA 3 Tingkatan 5

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Kertas jawapan ini mengandungi 13 halaman bercetak

No	Mark Scheme *Skema markah*	Mark *Markah*
1(a)	Able to record all readings accurately to one decimal point with unit <u>Answer</u> | Temperature (℃) *Suhu (℃)*	Observation *Pemerhatian*
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30	55.0 s
35	47.0 s
40	41.0 s
45	37.0 s
50	33.0 s		3
	Able to record any 4 readings accurately/ all readings correctly but without decimal point/ without unit	2
	Able to record any 3 readings accurately but without decimal point/ without unit	1
	No response or wrong response or less than 3 correct readings	0

No	Mark Scheme *Skema markah*	Mark *Markah*
1(b)	Able to plot the graph which fulfills all the following criteria : • All points are transferred correctly • Correct and smooth curve	3
	Able to plot graph with the following criteria • At least 4 points are transferred correctly. • Correct curve	2
	Able to have an idea to plot a graph • Curve	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*		Mark *Markah*
1(c)(i)	Able to state the observation correctly		
	Sample answer 'X' disappears **from sight** // 'X' cannot be seen // Yellow **precipitate/solid** // Solid cover 'X' *'X' hilang daripada penglihatan //'X'tidak boleh dilihat // mendakan/pepejal kuning// pepejal menutup 'X'*		3
	Able to state the observation less correctly		
	Sample answer Yellow solution/ mixture // 'X' disappears // time taken increases/ decreases *Larutan/campuran kuning//'X' hilang//masa yang diambil bertambah/berkurang*		2
	Able to give an idea of the observation		
	Sample answer Yellow // cloudy/ milky precipitate/ solid *Kuning// mendakan/pepejal keruh*		1
	No response or wrong response		0

No	Mark Scheme *Skema markah*		Mark *Markah*
1(c)(ii)	Able to state the inference correctly		
	Sample answer Sulphur is formed // Rate of reaction of temperature is 50 ℃ the highest // Rate of reaction of temperature is 30 ℃ the lowest *Sulfur terbentuk // Kadar tindak balas pada suhu 50 ℃ tertinggi // Kadar tindak balas pada suhu 30 ℃ terendah*		3
	Able to state the inference		
	Sample answer Acid reacts with sodium thiosulphate // Rate of reaction increases/ decreases // Insoluble substance *Asid bertindak balas dengan natrium tiosulfat // kadar tindak balas meningkat // bahan tidak terlarutkan*		2
	Able to give an idea of the inference		
	Sample answer Reaction occurs// Rate of reaction changes// Insoluble salt *Tindak balas berlaku // kadar tindak balas berubah // garam tak terlarutkan*		1
	No response or wrong response		0

3

No	Mark Scheme *Skema markah*	Mark *Markah*

1(d)	Able to state all variables correctly
	
	Sample answer
	
	   (i) Manipulated variable:
	Temperature of **sodium thiosulphate**
	Suhu natrium tiosulfat
	
	   (ii) Responding variable:
	Time taken for 'X' to disappear // rate of reaction
	Masa yang diambil untuk 'X' hilang // kadar tindak balas
	
	   (iii) Fixed variable:
	Volume and concentration of sodium thiosulphate // size of conical flask//
	volume and concentration of sulphuric acid //sulphuric acid// sodium thiosulphate
	Isipadu dan kepekatan natrium tiosulfat // saiz kelalang kon // isipadu dan kepekatan asid sulfuric // asid sulfuric// natrium tiosulfat
		3

	Able to state any two variables correctly	2
	Able to state any one variable correctly	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
1(e)	Able to state one hypothesis correctly Sample answer The higher / lower the temperature of **sodium thiosulphate** , the higher/ lower the rate of reaction // *Semakin tinggi/rendah suhu natrium tiosulfat, semakin tinggi/rendah kadar tindak balas* The higher / lower the temperature of **sodium thiosulphate**, the shorter/ longer the time taken for mark X to disappear *Semakin tinggi/rendah suhu natrium tiosulfat ,semakin singkat/lama masa yang diambil untuk tanda 'X' hilang*	3
	Able to state one hypothesis Sample answer When the temperature of sodium thiosulphate is high. The reaction is fast/ time taken short // *Apabila suhu natrium tiosulfat tinggi, tindak balas cepat/ masa yang diambil singkat* The higher/ lower the rate of reaction, the higher / lower the temperature of **sodium thiosulphate** // *Semakin tinggi/rendah kadar tindak balas, semakin tinggi/rendah suhu natrium tiosulfat* The shorter/ longer the time taken for mark X to disappear ,the higher / lower the temperature of **sodium thiosulphate**. *Semakin singkat/lama masa yang diambil untuk tanda 'X' hilang, semakin tinggi/ rendah suhu natrium tiosulfat*	2
	Able to give an idea of hypothesis Sample answer The temperature affects the rate of reaction // *Suhu mempengaruhi kadar tindak balas* The temperature change, the rate of reaction change *Suhu berubah, kadar tindak balas berubah*	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
1(f)(i)	Able to state the relationship between the temperature of sodium thiosulphate solution and the rate of reaction correctly Sample answer The higher the temperature of sodium thiosulphate , the higher the rate of reaction *Semakin tinggi suhu natrium tiosulfat, semakin tinggi kadar tindak balas*	3
	Able to state the relationship between the temperature of sodium thiosulphate solution and rate of reaction less correctly Sample answer The rate of reaction is directly proportional to the temperature of sodium thiosulphate *Kadar tindak balas berkadar langsung dengan suhu natrium tiosulfat*	2
	Able to give an idea of the relationship Sample answer Rate of reaction is affected/ change by temperature *Kadar tindak balas dipengaruhi/ berubah oleh suhu*	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
1(f)(ii)	Able to determine the time taken for the mark X to disappear from sight with the following criteria: Sample answer • Extend the line on the graph • Show on the graph the way to obtain the value of 1/time • State the time with unit 1/time = 0.033 s^{-1} Time = 1/ 0.033 = 30.3 s	3
	Able to fulfill any two criteria	2
	Able to fulfill any one criteria	1
	No response or wrong response	0

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No	Mark Scheme *Skema markah*	Mark *Markah*
1(g)	Able to explain with comparison by referring to the height/ quantity of precipitate formed in a certain time correctly Sample answer The precipitate is thinner/ lower *Mendakan lebih nipis/rendah*	3
	Able to explain without comparison by referring to the height/ quantity of precipitate formed Sample answer The precipitate is thin / low *Mendakan nipis/rendah*	2
	Able to give an idea Sample answer The formation of precipitate// *Pembentukan mendakan* The height/ quantity of precipitate is different *Tinggi/kuantiti mendakan berbeza*	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*

1(h)	Able to state the operational definition for the rate of reaction with the following criteria:
	   (i) What should be done : the time taken// stop watch reading
	             Masa yang diambil// bacaan jam randik
	   (ii) What should be observed : 'X' not seen /disappears
	             'X' tidak kelihatan/ hilang
	
	Sample answer
	Time taken for 'X' is not seen / disappear
	Masa yang diambil untuk 'X' tidak kelihatan/ hilang
		3

	Able to state the operational definition the rate of reaction that fulfill only one of the criteria Sample answer Stop watch reading// Time taken // 'X' disappears/not seen *Bacaan jam randik// masa yang diambil// 'X' hilang/tidak kelihatan*	2
	Able to give an idea the operational definition for the rate of reaction Sample answer Reactant used/ Product formed // Time//time taken// when two solutions are mixed //Precipitate *Bahan / hasil tindak balas digunakan// masa//masa yang diambil//apabila dua larutan dicampur//mendakan*	1
	No response or wrong response	0

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No	Mark Scheme *Skema markah*	Mark *Markah*
1(i)	Able to classify all the reaction correctly Sample answer <table><tr><td>Fast reaction</td><td>Slow reaction</td></tr><tr><td>Displacement</td><td>Photosynthesis</td></tr><tr><td>Neutralization</td><td>Respiration</td></tr><tr><td>Double decomposition reaction</td><td>Corrosion</td></tr></table>	3
	Able to classify any four reaction correctly	2
	Able to classify any three reaction correctly or reverse classification	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
2(a)	Able to give the statement of the problem accurately. Sample answer: Does vulcanized rubber more elastic than unvulcanised rubber? *Adakah getah tervulkan lebih elastic daripada getah tidak tervulkan?*	3
	Able to give the statement of the problem correctly. Does vulcanized rubber more elastic? // *Adakah getah tervulkan lebih kenyal?* Does unvulcanized rubber less elastic?// *Adakah getah tidak tervulkan kurang kenyal?* Does vulcanized rubber and unvulcanised rubber have different elasticity?// *Adakah getah tervulkan dan getah tidak tervulkan mempunyai kekenyalan yang berbeza?* Does different types of rubber have different elasticity? // *Adakah jenis getah yang berbeza mempunyai kekenyalan yang berbeza?* To compare the elasticity of vulcanized rubber and unvulcanized rubber. *Untuk membandingkan keknyalan getah tervulkan dan getah tak tervulkan.*	2
	Able to give an idea of statement of the problem correctly Are they any differences in elasticity rubber? *Adakah terdapat perbezaan kekenyalan getah?*	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
2(b)	Able to state the three variables correctly. Manipulated variable: Type of rubber // Vulcanised rubber and unvulcanised rubber. *Jenis getah// getah tervulkan dan getah tidak tervulkan* Responding variable: The change in the length of the rubber strip// the length of rubber strip after the weight removed// elasticity *Perubahan panjang jalur getah // pemanjangan jalur getah setelah pemberat ditanggalkan// kekenyalan* Constant variable : Weight // size/initial length of rubber sheet *Pemberat // saiz/panjang asal kepingan getah*	3
	Able to state any one of the following variables correctly.	2
	Able to state any two of the following variables correctly.	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
2(c)	Able to give the hypothesis accurately. Sample answer: Vulcanised rubber is more/ less elastic than unvulcanised rubber. *Getah tervulkan lebih/ kurang kenyal daripada getah tak tervulkan.* **vice versa	3
	Able to give the hypothesis correctly. Sample answer: Vulcanized rubber able to stretch easily compared to unvulcanized rubber.// *Getah tervulkan boleh diregangkan dengan mudah berbanding getah tidak tervulkan* Vulcanised rubber is more /less elastic// *Getah tervulkan lebih/kurang kenyal* Elasticity of vulcanized rubber is higher than unvulcanized rubber *Kekenyalan getah tervulkan lebih tinggi berbanding getah tidak tervulkan* Type of rubber strip is effect the elasticity/length/the change of length. *Jenis jalur getah mempengaruhi kekenyalan/ pemanjangan/perubahan panjang.*	2

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	Able to give the hypothesis correctly. The two types of rubber have different elasticity *Dua jenis mempunyai perbezaan kekenyalan* Vulcanized rubber is elastic *Getah tervulkan kenyal* Unvulcanized rubber is less/not elastic *Getah tidak tervulkan kurang/tidak kenyal*	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
2(d)	Able to state complete material and apparatus Answer: -Vulcanised rubber strip/sheet -Unvulcanised rubber strip/sheet -Clip -Weigth (10g-100g) -Retort stand and clamp -Ruler	3
	Able to state material and apparatus that can conduct experiment. Answer: -Vulcanised rubber -Unvulcanised rubber -Weigth (10g-100g) -Ruler	2
	Able to state two material. Answer: -Vulcanised rubber // Unvulcanised rubber -Weight // ruler	1
	No response or wrong response	0

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No	Mark Scheme *Skema markah*	Mark *Markah*
2(e)	Able to state the complete procedure. Answer: 1.Cut a piece of vulcanized rubber into [10cm – 15 cm] and record// Measure the initial length of the vulcanized rubber strip by using ruler and record. *Potong sekeping getah tervulkan kepada [10cm – 15cm] dan rekodkan. // Ukur panjang asal jalur getah tervulkan dengan menggunakan pembaris dan rekodkan.* 2.Hang the vulcanized rubber strip/(unvulcanized rubber) on retort stand. *Gantungkan jalur getah tervulkan pada kaki retort.* 3.Hang the [10g – 100g] weights at the end of vulcanized rubber strip. *Gantungkan pemberat [10g – 100g] pada hujung jalur getah tervulkan.* 4.Take off/ remove the weight and measure the length of the vulcanized rubber strip and record. *Alihkan/ tanggalkan pemberat dan ukur panjang jalur getah tervulkan dan rekodkan.* 5.Repeat the experiment by replace the vulcanized rubber with unvulcanized rubber/(vulcanized rubber) *Ulang eksperimen dengan menggantikan jalur getah tervulkan dengan jalur getah tak tervulkan.*	3
	Able to state a procedure that can conduct the experiment. Step 3,4 and 5.	2
	Able to state a minimum procedure. Step 3 and 4.	1
	No response or wrong response	0

No	Mark Scheme *Skema markah*	Mark *Markah*
2(f)	Able to make a labeled tabulation of data with suitable unit. <table><tr><td>Type of rubber</td><td>Initial length/cm</td><td>Length of the rubber after the weight is taken off/cm</td></tr><tr><td>Vulcanized rubber</td><td></td><td></td></tr><tr><td>Unvulcanized rubber</td><td></td><td></td></tr></table>	2
	Able to make a table not completely without unit <table><tr><td>Type of rubber</td><td>Initial length</td><td>Length after</td></tr><tr><td>Vulcanized rubber</td><td></td><td></td></tr><tr><td>Unvulcanized rubber</td><td></td><td></td></tr></table>	1
	No response or wrong response	0

END OF ANSWER SCHEME
SKEMA JAWAPAN TAMAT