



KEMENTERIAN PENDIDIKAN
Jabatan Pendidikan Negeri Terengganu



MODUL PERKEMBANGAN PEMBELAJARAN SPM 2026

MPP 3

KIMIA KERTAS 2

Nama :

Kelas :



DISEDIAKAN OLEH PANEL AKRAM NEGERI TERENGGANU

Tidak dibenarkan menyunting atau mencetak mana-mana bahagian dalam modul ini tanpa kebenaran Pengarah Pendidikan Negeri Terengganu



NAMA :

TINGKATAN :

ANGKA GILIRAN :

KIMIA
Kertas 2
JULAI
2 ½ jam

MODUL PERKEMBANGAN PEMBELAJARAN 3 SIJIL PELAJARAN MALAYSIA 2026

Dua jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Tulis **nama** dan **tingkatan** anda pada ruangan yang disediakan.
2. Kertas soalan ini adalah dalam **dwibahasa**.
3. Soalan dalam Bahasa Melayu mendahului soalan yang sepadan dalam Bahasa Inggeris
4. Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam **Bahasa Inggeris** atau **Bahasa Melayu**.
5. Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.

<i>Untuk Kegunaan Pemeriksa</i>			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	5	
	2	5	
	3	6	
	4	7	
	5	8	
	6	9	
	7	10	
	8	10	
B	9	20	
	10	20	
C	11	20	
Jumlah			

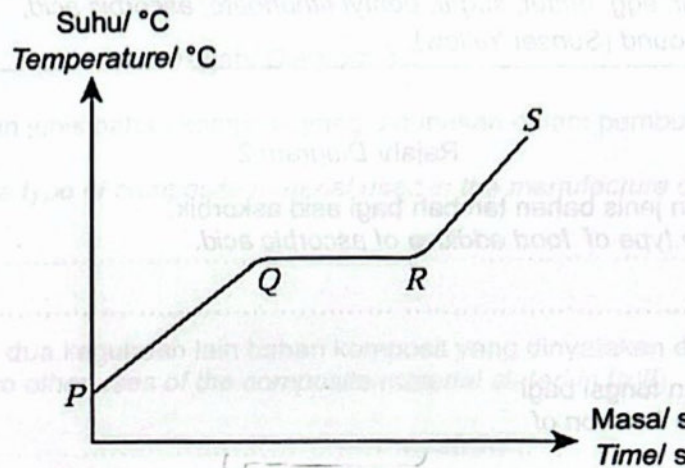
Kertas soalan ini mengandungi **31** halaman bercetak

Bahagian A
Section A

[60 markah]
[60 marks]

Jawab semua soalan dalam bahagian ini
Answer all questions in this section

- 1 Rajah 1 menunjukkan graf suhu melawan masa bagi pemanasan pepejal naftalena, $C_{10}H_8$ sehingga ia berubah menjadi cecair.
Diagram 1 shows a graph of temperature versus time for heating solid naphthalene, $C_{10}H_8$ until it turns into a liquid.



Rajah/ Diagram 1

- (a) Nyatakan jenis zarah bagi naftalena.
State the type of particle of naphthalene.
-
- [1 markah]
- (b) Berdasarkan Rajah 1, nyatakan keadaan fizik naftalena dari R ke S.
Based on Diagram 1, state the physical state of naphthalene from R to S.
-
- [1 markah]
- (c) Tandakan takat lebur naftalena pada Rajah 1.
Mark the melting point of naphthalene in Diagram 1.
- [1 markah]
- (d) Terangkan mengapa suhu naftalena tidak berubah dari Q ke R walaupun pemanasan masih diteruskan.
Explain why the temperature of naphthalene does not change in from Q to R even though heating continues.
-
-

[2 markah]



- 2 Rajah 2 menunjukkan label pada kotak yang berisi kek pisang.
Diagram 2 shows the label on the box of banana cake.

Kek pisang
Banana Cake



Bahan-bahan:
Ingredients:
Tepung gandum, telur, mentega, gula, pentil etanoat, asid askorbik,
Sebatian azo (Sunset Yellow)
*Wheat flour, egg, butter, sugar, pentyl ethanoate, ascorbic acid,
Azo compound (Sunset Yellow)*

Rajah/ Diagram 2

- (a) Nyatakan jenis bahan tambah bagi asid askorbik.
State the type of food additive of ascorbic acid.

[1 markah]

- (b) Nyatakan fungsi bagi
State the function of

(i) Sunset Yellow:
Sunset Yellow

(ii) Pentil etanoat:
Pentyl ethanoate

[2 markah]

- (c) Satu daripada bahan dalam makanan dalam Rajah 2 tidak sesuai bagi pesakit diabetik. Nyatakan bahan tersebut dan cadangkan **satu** bahan tambah makanan lain yang memberikan kemanisan yang sama tetapi mempunyai kandungan kalori yang lebih rendah.
*One of the ingredients in the food in Diagram 2 is not suitable for a diabetic patient. State the ingredient and suggest **one** another food additive that give the same sweetness but has low calories.*

[2 markah]

- 3 Rajah 3.1 menunjukkan topi kaledar menggunakan jenis bahan komposit dalam pembuatannya.
Diagram 3.1 shows a helmet that uses a type of composite material in its production.



Rajah/ Diagram 3.1

- (a) (i) Nyatakan jenis bahan komposit yang digunakan dalam pembuatan topi kaledar.
State the type of composite material used in the manufacture of helmet.

.....
[1 markah]

- (ii) Berikan dua kegunaan lain bahan komposit yang dinyatakan di (a)(i).
Give two other uses of the composite material stated in (a)(i).

.....
[2 markah]

- (b) Seramik boleh dikelaskan kepada dua kumpulan iaitu seramik tradisional dan seramik termaju. Rajah 3.2 menunjukkan kegunaan seramik termaju dalam komponen brek kenderaan.
Ceramics can be classified into two groups, namely traditional ceramics and advanced ceramics. Diagram 3.2 shows the use of advanced ceramics in vehicle brake components.



Rajah/ Diagram 3.2

- (i) Nyatakan **satu** sifat bagi seramik seperti di Rajah (3)(b).
*State **one** property of the ceramic as shown in Diagram (3)(b).*

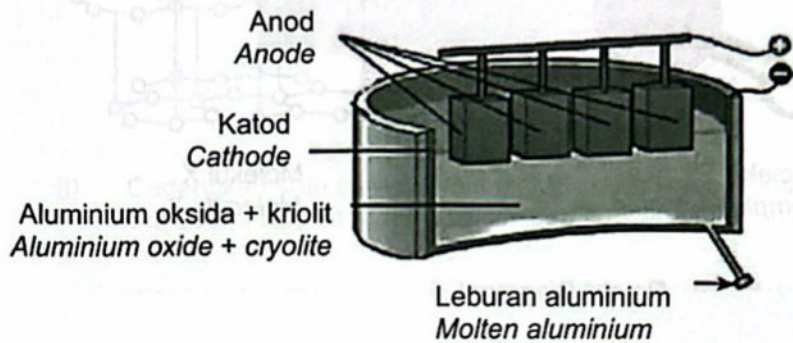
.....
[1 markah]

- (ii) Nyatakan **dua** bahan binaan daripada seramik yang digunakan dalam pembinaan rumah.
*State **two** ceramic materials used in the construction of houses.*

.....
[2 markah]

- 4 Tin makanan dan minuman kebanyakannya diperbuat daripada aluminium kerana ringan dan mudah dibentuk. Penghasilan aluminium diestruk daripada bijihnya melalui kaedah elektrolisis. Rajah 4.1 menunjukkan pengestrakan aluminium menggunakan karbon sebagai elektrod.

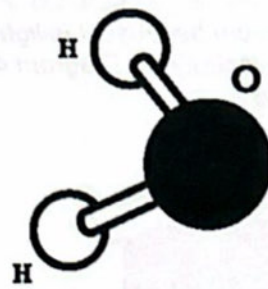
Food and beverage cans are mostly made of aluminium because it is light and easy to shape. Aluminium is extracted from its ore through electrolysis. Diagram 4.1 shows the extraction of aluminium using carbon as an electrode.



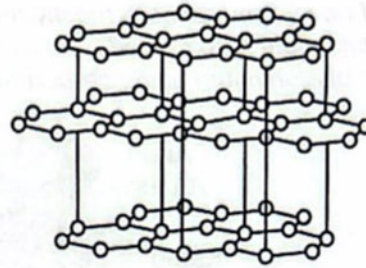
Rajah/ Diagram 4.1

- (a) Tuliskan formula aluminium oksida.
Write formula of aluminium oxide.
.....
[1 markah]
- (b) Selain gas oksigen dibebaskan, gas X juga terbebas semasa Proses pengestrakan. Huraikan ujian pengesahan ke atas gas tersebut.
Apart from oxygen gas being released, gas X is also released during the extraction process. Describe the confirmation test on the gas.
.....
[2 markah]
- (c) Tuliskan persamaan setengah di katod.
Write half equation at cathode.
.....
[2 markah]
- (d) (i) Nyatakan **satu** kesan buruk pengestrakan aluminium terhadap alam sekitar.
*State **one** bad effect of aluminium extraction on the environment.*
.....
[1 markah]
- (ii) Cadangkan **satu** cara untuk mengurangkan kesan pencemaran alam sekitar.
*Suggest **one** way to reduce the effects of environmental pollution.*
.....
[1 markah]

- 5 (a) Rajah 5.1 menunjukkan dua jenis struktur molekul bagi sebatian kovalen.
Diagram 5.1 shows two types of molecular structures of covalent compounds.



Molekul Ringkas
Simple Molecule



Molekul X
Molecule X

Rajah/ Diagram 5.1

- (i) Apakah jenis struktur molekul X?
What is the type of structure molecule X?

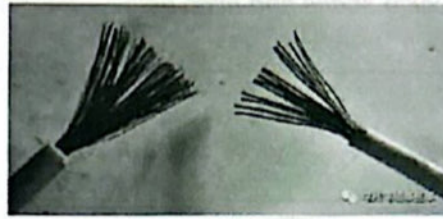
.....
[1 markah]

- (ii) Bandingkan takat lebur antara molekul ringkas dan molekul X.
Terangkan jawapan anda.
*Compare the melting point between simple molecule and molecule X.
Explain your answer.*

.....
[3 markah]

- (b) Rajah 5.2 menunjukkan wayar elektrik yang terputus menyebabkan elektrik tidak dapat mengalir.

Diagram 5.2 shows a disconnected electrical wire causing electricity to not flow.



Rajah / Diagram 5.2

- (i) Cadangkan satu cara supaya elektrik boleh mengalir semula.
Suggest a way so that electricity can flow again.

.....

 [1 markah]

- (ii) Terangkan bagaimana logam kuprum dapat mengalirkan elektrik.
Explain how copper metal can conduct electricity.

.....

 [3 markah]

- 6 Jadual 6 menunjukkan maklumat bagi tiga set eksperimen yang dijalankan untuk mengkaji kadar tindak balas antara kulit kerang dengan asid nitrik.
Table 6 shows the information for three sets of experiment to investigate the rate of reaction between the cockle shells and nitric acid.

Eksperimen Experiment	Maklumat Information
Set I	5g serpihan kulit kerang dan 50 cm ³ asid nitrik 0.1 mol dm ⁻³ pada 30°C <i>5g crushed cockle shell and 50 cm³ of 0.1 mol dm⁻³ of nitric acid at 30°C</i>
Set II	5g serpihan kulit kerang dan 50 cm ³ asid nitrik 0.2 mol dm ⁻³ pada 30°C <i>5g crushed cockle shell and 50 cm³ of 0.2 mol dm⁻³ of nitric acid at 30°C</i>
Set III	5g serpihan kulit kerang dan 50 cm ³ asid nitrik 0.2 mol dm ⁻³ pada 40°C <i>5g crushed cockle shell and 50 cm³ of 0.2 mol dm⁻³ of nitric acid at 40°C</i>

Jadual / Table 6

- (a) Nyatakan nama bahan kimia yang terkandung dalam kulit kerang
State the name of chemical substance that contain in cockle shell.

.....
 [1 markah]

- (b) Tulis persamaan kimia bagi tindak balas antara asid nitrik dan kulit kerang.
Write chemical equation for the reaction between nitric acid and cockle shell.

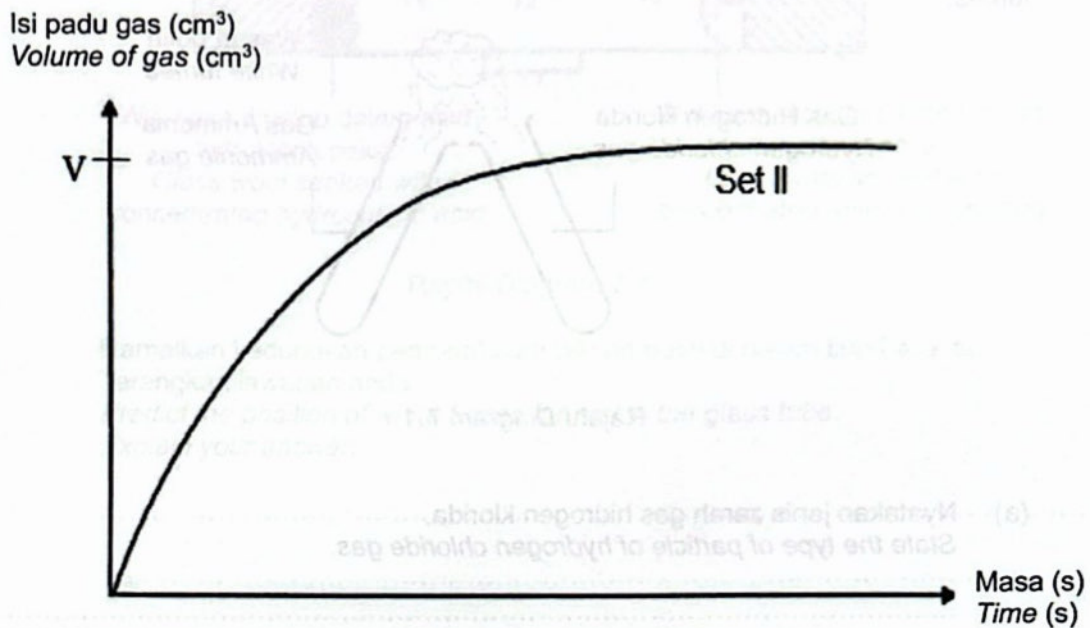
.....
 [2 markah]

- (c) Berdasarkan Jadual 6,
Based on Table 6,

- (i) Eksperimen manakah menunjukkan kadar tindak balas paling tinggi?
Which experiment shows the highest rate of reaction?

.....
 [1 markah]

- (ii) Rajah 6 menunjukkan graf isi padu gas yang dikumpul melawan masa bagi eksperimen Set II.
 Diagram 6 shows the graph of volume of gas collected against time for experiment Set II.



Rajah/ Diagram 6

Lakarkan lengkung bagi isi padu gas melawan masa bagi Set I dan Set III pada paksi yang sama pada Rajah 6.

Sketch the curve for the volume of gas against time for Set I and Set III on the same axes in Diagram 6.

[2 markah]

- (iii) Dengan merujuk kepada Teori Perlanggaran, terangkan perbezaan kadar tindak balas antara Set II dan Set III.

By referring to Collision Theory, explain the difference in rate of reaction between Set II and Set III.

.....

.....

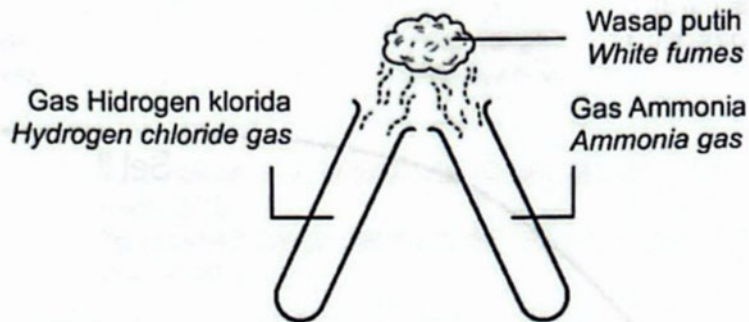
.....

.....

[3 markah]



- 7 Rajah 7.1 menunjukkan susunan radas untuk mengkaji tindak balas antara gas hidrogen klorida dengan gas ammonia. Tindak balas antara kedua-dua gas itu menghasilkan wasap putih.
Diagram 7.1 shows an apparatus set up to study the reaction between hydrogen chloride gas with ammonia gas. The reaction between the two gases produce white fumes.



Rajah/ Diagram 7.1

- (a) Nyatakan jenis zarah gas hidrogen klorida.
State the type of particle of hydrogen chloride gas.

[1 markah]

- (b) (i) Tulis persamaan kimia bagi tindak balas yang berlaku.
Write the chemical equation for the reaction that occurs.

[2 markah]

- (ii) Tafsir persamaan kimia tersebut secara kuantitatif.
Interpret the chemical equation quantitatively.

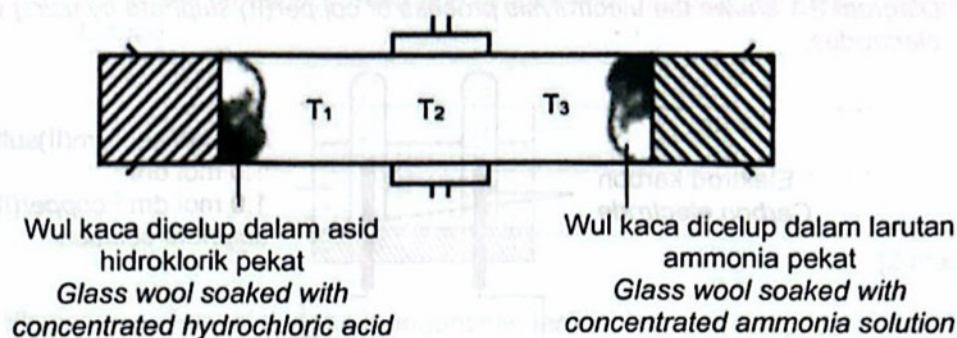
[1 markah]

- (iii) Adakah wasap putih akan terbebas jika gas ammonia digantikan dengan gas karbon dioksida?
Does white fumes will be produced if ammonia gas is replaced with carbon dioxide gas.

[1 markah]



- (c) Susunan radas dalam Rajah 7.1 diubah suai seperti Rajah 7.2.
The set-up apparatus in Diagram 7.1 is modified as in Diagram 7.2.



Rajah/ Diagram 7.2

Ramalkan kedudukan pembentukan wasap putih di dalam tiub kaca itu.
Terangkan jawapan anda.
Predict the position of white fumes formed in the glass tube.
Explain your answer.

[3 markah]

- (d) Jadual 7 menunjukkan dua formula yang mewakili sebatian X. Sebatian X menghasilkan air dan gas karbon dioksida apabila dibakar dalam oksigen berlebihan.
Table 7 shows two formulas representing compound X. Compound X produces water and carbon dioxide gas when burned in excess oxygen.

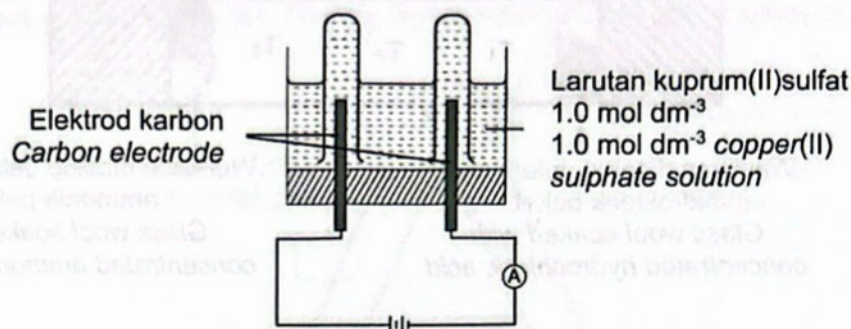
Formula empirik Empirical formula	Formula molekul Molecular formula
CH_2O	$\text{C}_6\text{H}_{12}\text{O}_6$

Jadual/ Table 7

Sofea hendak menulis persamaan kimia bagi tindak balas pembakaran sebatian X. Berdasarkan Jadual 7, formula yang manakah lebih sesuai digunakan oleh Sofea untuk menulis persamaan kimia tersebut?
Wajarkan pilihan Sofea.
Sofea wants to write chemical equation for the reaction of combustion of compound X. Based on Table 7, which formula is more suitable to be used by Sofea to write the chemical equation?
Justify Sofea's choice.

[2 markah]

- 8 Rajah 8.1 menunjukkan proses elektrolisis larutan kuprum(II) sulfat dengan menggunakan elektrod karbon.
Diagram 8.1 shows the electrolysis process of copper(II) sulphate by using carbon electrodes.



Rajah/ Diagram 8.1

Jadual 8.1 menunjukkan nilai keupayaan elektrod piawai sel setengah bagi beberapa bahan.

Table 8.1 shows the values of standard electrode potential for the half - cells of some substance.

Tindak balas sel setengah Reaction of half-cell	E^0 (V)
$\text{Cu}^{2+} + 2e \rightleftharpoons \text{Cu}$	+0.34
$\text{O}_2 + 2\text{H}_2\text{O} + 4e \rightleftharpoons 4\text{OH}^-$	+0.40
$2\text{H}^+ + 2e \rightleftharpoons \text{H}_2$	0.00
$\text{Cl}_2 + 2e \rightleftharpoons 2\text{Cl}^-$	+1.36
$\text{S}_2\text{O}_8^{2-} + 2e \rightleftharpoons 2\text{SO}_4^{2-}$	+2.01

Jadual/ Table 8.1

- (a) Apakah warna larutan kuprum(II) sulfat?
What is the colour of the copper(II) sulphate solution?

[1 markah]

- (b) Apakah faktor yang mempengaruhi elektrolisis?
What factors affect electrolysis?

[1 markah]

- (c) (i) Nyatakan jenis tindak balas di katod.
State type of reaction at the cathode.

[1 markah]



- (ii) Namakan hasil di katod dan terangkan pembentukan hasil di katod.
Name the products formed and explain how the products at the cathode formed.

.....

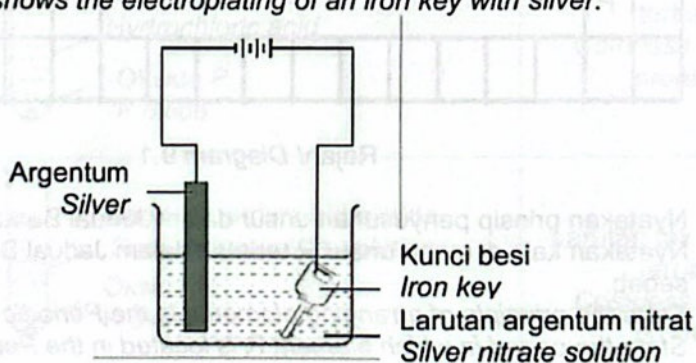
[2 markah]

- (d) Eksperimen diulangi dengan menggantikan larutan kuprum(II) klorida berkepekatan yang sama. Nyatakan perbezaan pemerhatian. Jelaskan
The experiment is repeated by replacing the copper(II) chloride solution with the same concentration. State the difference in observations. Explain

.....

[3 markah]

- (e) Rajah 8.2 menunjukkan penyaduran kunci besi dengan argentum.
Diagram 8.2 shows the electroplating of an iron key with silver.



Rajah/ Diagram 8.2

Selepas 30 minit, didapati tiada perubahan pada kunci besi. Apakah yang anda perlu lakukan supaya penyaduran kunci besi ini berjaya? Wajarkan tindakan ini.
After 30 minutes, there was no change in the iron key. What do you need to do to make the electroplating of this iron key successful? Justify this action.

.....

[2 markah]

Bahagian B
Section B

[20 markah/ marks]

Jawab mana- mana satu soalan daripada bahagian ini
Answer any one question from this section

- 9 Rajah 9.1 menunjukkan sebahagian daripada Jadual Berkala Unsur yang terdiri daripada unsur P, R dan oksigen. Unsur P dan unsur R bukan merupakan simbol sebenar unsur. Unsur P dan unsur R boleh bertindak balas dengan oksigen membentuk sebatian oksida P dan sebatian oksida R di mana kedua- dua sebatian yang terbentuk mempunyai jenis ikatan kimia yang berbeza.
Diagram 9.1 shows part of Periodic Table of Element that consists of element P, R and oxygen. Element P and element R are not the actual symbol of element. Element P and R able to react with oxygen to form oxide compound of P and oxide compound of R where both compounds formed have different types of chemical bond.

1																	18
	2																
		P															

Rajah/ Diagram 9.1

- (a) Nyatakan prinsip penyusunan unsur dalam Jadual Berkala Unsur.
Nyatakan kala di mana unsur R terletak dalam Jadual Berkala Unsur dan berikan sebab.
*State the principle of arranging elements in the Periodic Table of Element.
State the period in which element R is located in the Periodic Table of Element and give a reason.*

[3 markah]

- (b) (i) Apakah yang dimaksudkan dengan ikatan kimia.
Terangkan pembentukan ikatan kimia sebatian oksida P.
*What is the meaning of chemical bond.
Explain the formation of chemical bond in the compound of P oxide.*

[6 markah]

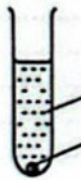
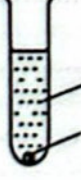
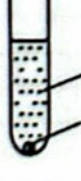
- (ii) Tulis persamaan kimia bagi pembentukan sebatian oksida R.
Write a chemical equation for the formation of the compound of R oxide.

[2 markah]

- (c) Terangkan perbezaan sifat bagi sebatian oksida P dan oksida R yang terbentuk dari segi takat lebur dan kekonduksian elektrik.
Explain the differences in properties of P oxide and R oxide compound formed in terms of melting point and electrical conductivity.

[5 markah]

- (d) Rajah 9.2 menunjukkan empat set tindak balas melibatkan oksida P dan oksida R yang dimasukkan ke dalam dua larutan yang berbeza. Campuran larutan dikacau dengan rod kaca.
Diagram 9.2 shows four sets of reaction involving P oxide and R oxide which are added into two different solutions. The mixture of solution is stirred with glass rod.

Set Set	Susunan radas <i>Apparatus set-up</i>	Pemerhatian <i>Observation</i>
I	 Larutan natrium hidroksida <i>Sodium hydroxide solution</i> Oksida P <i>P oxide</i>	Tiada perubahan <i>No change</i>
II	 Asid hidroklorik <i>Hydrochloric acid</i> Oksida P <i>P oxide</i>	Larutan tak berwarna terhasil <i>Colorless solution produce</i>
III	 Larutan natrium hidroksida <i>Sodium hydroxide solution</i> Oksida R <i>R oxide</i>	Larutan tak berwarna terhasil <i>Colorless solution produce</i>
IV	 Asid hidroklorik <i>Hydrochloric acid</i> Oksida R <i>R oxide</i>	Tiada perubahan <i>No change</i>

Rajah/ Diagram 9.2

Terangkan sifat oksida P dan oksida R berdasarkan pemerhatian dalam Rajah 9.2.

Explain the properties of oxide P and oxide R based on the observation in the Diagram 9.2.

[4 markah]

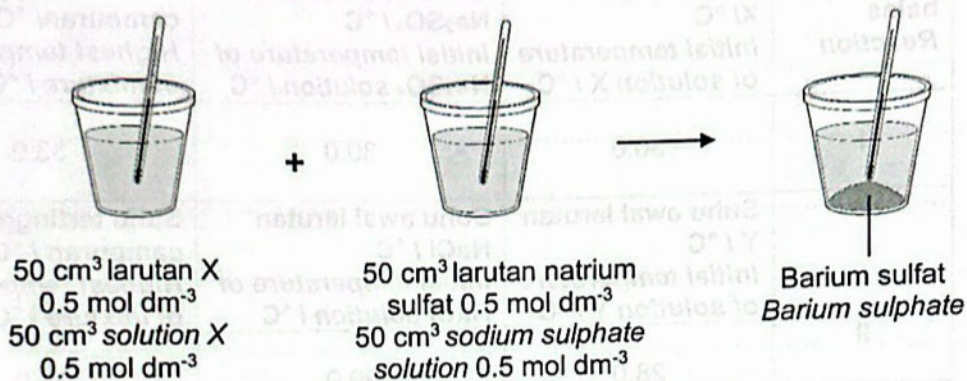
SOALAN 9
QUESTION 9

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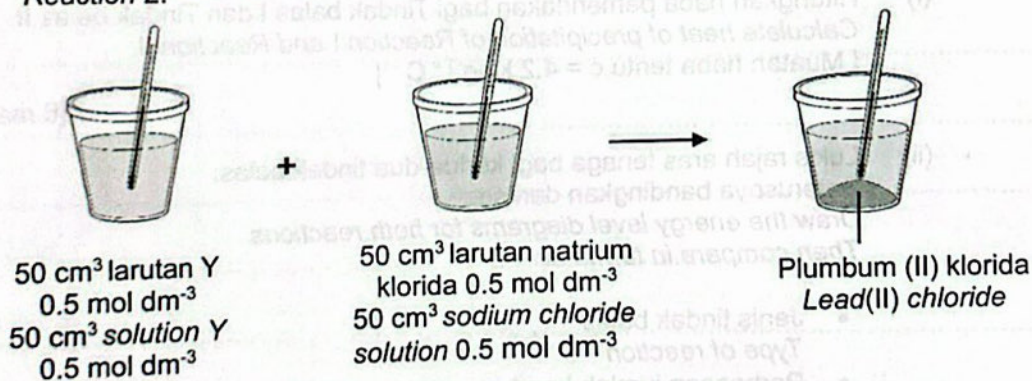
[illegible]

- 10 Rajah 10.1 menunjukkan dua tindak balas yang dijalankan untuk menyediakan garam. Diagram 10.1 shows two reactions carried out to preparation of salt.

Tindak balas 1:
Reaction 1:



Tindak balas 2:
Reaction 2:



Rajah/ Diagram 10.1

- (a) Nyatakan nama tindak balas untuk menyediakan kedua-dua garam itu.
State the name of the reaction to prepared both salts.

[1 markah]

Cadangkan nama bagi larutan X dan larutan Y. Tulis satu persamaan ion bagi mana- mana tindak balas dalam Rajah 10.1. Seterusnya hitung jisim barium sulfat yang terbentuk. [Jisim atom relatif: O=16, S=32, Ba= 137]
Suggest names for solution X and solution Y. Write an ionic equation for any of the reactions in Diagram 10.1. Then calculate the mass of barium sulphate formed. [Relative atomic mass: O=16, S=32, Ba= 137]

[6 markah]



- (b) Jadual 10.2 menunjukkan suhu sebelum dan selepas tindak balas bagi larutan dalam Tindak balas I dan Tindak balas II.
Table 10.2 shows the temperatures before and after the reaction for the solutions in Reaction I and Reaction II.

Tindak balas Reaction	Suhu awal larutan X / °C <i>Initial temperature of solution X / °C</i>	Suhu awal larutan Na ₂ SO ₄ / °C <i>Initial temperature of Na₂SO₄ solution / °C</i>	Suhu tertinggi campuran / °C <i>Highest temperature of mixture / °C</i>
I	30.0	30.0	33.0
II	Suhu awal larutan Y / °C <i>Initial temperature of solution Y / °C</i>	Suhu awal larutan NaCl / °C <i>Initial temperature of NaCl solution / °C</i>	Suhu tertinggi campuran / °C <i>Highest temperature of mixture / °C</i>
	28.0	30.0	27.0

Jadual/ Table 10.2

- (i) Hitungkan haba pemendakan bagi Tindak balas I dan Tindak balas II.
Calculate heat of precipitation of Reaction I and Reaction II.
 [Muatan haba tentu, $c = 4.2 \text{ kJ g}^{-1} \text{ } ^\circ\text{C}^{-1}$]
 [6 markah]
- (ii) Lukis rajah aras tenaga bagi kedua-dua tindak balas.
 Seterusnya bandingkan dari segi:
Draw the energy level diagrams for both reactions.
Then compare in terms of:
- Jenis tindak balas
Type of reaction
 - Perbezaan jumlah kandungan tenaga bahan dan hasil tindak balas
The different of total of energy content in reactant and product
 - Perubahan haba semasa pembentukan ikatan dan pemutusan ikatan
Heat changes during bond formation and bond breaking
- [7 markah]

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Bahagian C
Section C**[20 markah/ marks]**

Jawab semua soalan daripada bahagian ini
Answer all question from this section

- 11 (a) Rajah 11 menunjukkan dua jenis bahan diperbuat daripada polimer dan kegunaannya dalam kehidupan seharian.
Diagram 11 shows two types of materials made from polymers and their uses in daily life.

Bahan Material	Kegunaan Uses
 Polimer A Polymer A	Paip air domestik Domestic water pipes
 Polimer B Polymer B	Botol plastik Plastic bottle

Rajah/ Diagram 11

Nyatakan maksud polimer. Berikan nama monomer bagi polimer A dan nama polimer bagi Polimer B. Tuliskan persamaan pempolimeran bagi penghasilan polimer A dan polimer B.

State the meaning of polymer. Give the name of the monomer for polymer A and the name of the polymer for polymer B. Write the polymerization equation for the production of polymer A and polymer B.

[7 markah]

- (b) Jadual 11 menunjukkan maklumat bagi sebatian P, sebatian Q dan sebatian R.
Table 11 shows the information of compounds P, Q and R.

Sebatian Compound	Maklumat Information
P	• Terdiri daripada unsur karbon dan hidrogen sahaja • Mempunyai empat atom karbon • Menyahwarnakan warna ungu larutan kalium manganat(VII) berasid. • <i>Consists of carbon and hydrogen elements only</i> • <i>Has four carbon atoms</i> • <i>Decolourises the purple colour of acidified potassium manganate(VII)</i>
Q	• Terdiri daripada unsur karbon, hidrogen dan oksigen • Mempunyai dua atom karbon • Larut dalam air • Bertindak balas dengan asid butanoik menghasilkan sebatian W yang berbau manis • <i>Consists of carbon, hydrogen and oxygen elements</i> • <i>Has two carbon atoms</i> • <i>Soluble in water</i> • <i>Reacts with butanoic acid to produce sweet smells of compound W</i>
R	• Terdiri daripada unsur karbon dan hidrogen sahaja • Mempunyai empat atom karbon • Tidak menyahwarnakan warna ungu larutan kalium manganat(VII) berasid. • <i>Consists of carbon and hydrogen elements only</i> • <i>Has four carbon atoms</i> • <i>Does not decolourise the purple colour of acidified potassium manganate(VII)</i>

Jadual/ Table 11

Berdasarkan maklumat dalam Jadual 11,
Based on the information in Table 11,

- (i) Kenal pasti siri homolog bagi sebatian P dan nyatakan nama sebatian Q dan sebatian R, Terangkan perbezaan pemerhatian bagi sebatian P dan sebatian R apabila bertindak balas dengan larutan kalium manganat(VII) berasid.
Identify the homologous series of compound P and state the names of compound Q and compound R. Explain the differences observed for compound P and compound R when reacting with acidified potassium manganate(VII) solution.

[5 markah]
 SULIT

- (ii) Sebatian W merupakan bahan tambah makanan yang terdapat dalam ais krim berperisa nenas. Namakan sebatian W. Terangkan bagaimana anda dapat menyediakan sebatian W di makmal sekolah. Dalam penerangan anda, huraikan bagaimana anda dapat mengesahkan bahawa sebatian W menghasilkan bau seperti nenas.

Compound W is a food additive found in pineapple-flavored ice cream.

Name the compound W. Explain how you could prepare compound W in the school laboratory. In your explanation, describe how you could confirm that compound W produces a pineapple-like odour.

[8 markah]

**KERTAS SOALAN TAMAT
END OF QUESTION**



SOALAN 11
QUESTION 11

[illegible]

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