

SULIT

4541/1

Kimia

Kertas 1

November

2022

1 1/4 jam

Nama

Tingkatan

UJIAN DIAGNOSTIK TINGKATAN 5

KIMIA

Kertas 1

Satu jam lima belas minit

- 1. Kertas soalan ini adalah dwibahasa.*
- 2. Soalan dalam Bahasa Melayu mendahului soalan yang sepadan dalam Bahasa Inggeris.*
- 3. Jawab **semua** soalan*

Soalan ini mengandungi 24 halaman bercetak

1 Atom manakah yang membentuk anion?

Which atom forms an anion?

A Natrium

Sodium

B Zink

Zinc

C Oksigen

Oxygen

D Karbon

Carbon

2 Apakah formula kimia bagi plumbum (II) oksida?

What is the chemical formula of lead (II) oxide?

A PbO

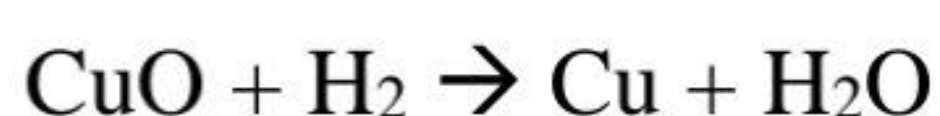
B PbO₂

C Pb₂O₂

D PbO₄

3 Persamaan berikut mewakili tindak balas untuk menentukan formula empirik bagi kuprum(II) oksida.

The following equation represents the reaction to determine the empirical formula of copper (II) oxide.



Oksida logam manakah mempunyai tindak balas yang sama untuk menentukan formula empirik?

Which metal oxide has the same reaction to determine the empirical formula?

A Magnesium oksida

Magnesium oxide

B Aluminium oksida

Aluminium oxide

C Plumbum(II) oksida

Lead (II) oxide

D Kalsium oksida

Calcium oxide

- 4 Pernyataan manakah **bukan** ciri istimewa unsur peralihan?
*Which statement is **not** the special characteristic of transition elements?*
- A Berfungsi sebagai mangkin
Functions as catalyst
 - B Mempunyai ketumpatan yang rendah
Have low densities
 - C Membentuk sebatian berwarna
Form coloured compound
 - D Mempunyai lebih daripada satu nombor pengoksidaan
Have more than one oxidation number
- 5 Pernyataan di bawah menunjukkan sifat fizik bagi suatu sebatian.
Statement below shows the physical properties of a compound.
- Larut dalam pelarut organik
Soluble in organic solvents
 - Takat lebur dan takat didih rendah
Low melting and boiling points

Bahan manakah mempunyai sifat fizik seperti di atas?
Which substance has the physical properties as above?

- A Naftalena
Naphthalene
- B Plumbum(II) bromida
Lead(II) bromide
- C Ammonium nitrat
Ammonium nitrate
- D Natrium klorida
Sodium chloride

- 6 Jadual 1 menunjukkan susunan elektron bagi atom-atom unsur R dan S.
Table 1 shows the electron arrangement of atoms of element R and S.

Atom R	Atom S
2.4	2.8.7

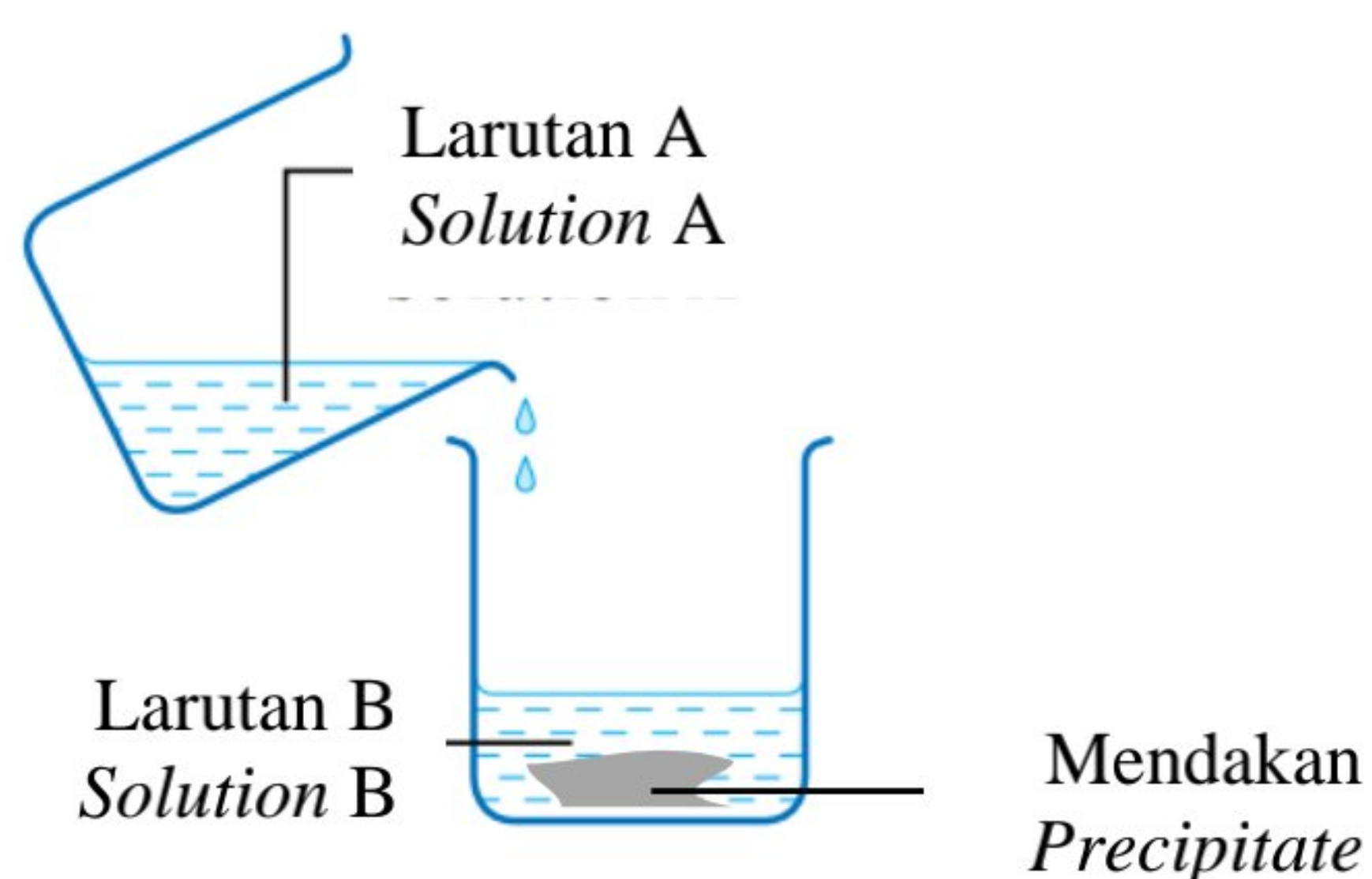
Jadual 1 / Table 1

Apakah formula dan jenis ikatan bagi sebatian yang terbentuk daripada tindak balas antara R dan S?

What is the formula and the type of bond of the compound formed from the reaction between R and S?

	Formula <i>Formula</i>	Jenis ikatan <i>Type of bond</i>
A	RS ₄	Kovalen / <i>Covalent</i>
B	R ₄ S	Kovalen / <i>Covalent</i>
C	R ₂ S	Ion / <i>Ionic</i>
D	RS ₂	Ion / <i>Ionic</i>

- 7 Rajah 1 menunjukkan tindak balas penghasilan suatu garam.
Diagram 1 shows a reaction to prepare a salt.



Rajah 1 / Diagram 1

Apakah garam yang dapat dihasilkan melalui tindak balas tersebut?

What salt can be produced by this reaction?

- A Ferum (II) klorida
Iron (II) chloride
- B Ammonium karbonat
Ammonium carbonate
- C Magnesium nitrat
Magnesium nitrate
- D Kalsium sulfat
Calcium sulphate

8 Bahan kimia yang mempunyai kepekatan ion hidroksida yang rendah ialah
The chemical substance with low concentration of hydroxide ion is

- A asid kuat
strong acid
- B asid lemah
weak acid
- C alkali kuat
strong alkali
- D alkali lemah
weak alkali

9 Bahan X mempunyai ciri-ciri berikut.
Substance X has the following characteristics.

- Menukarkan kertas litmus biru lembap kepada merah
Turns moist blue litmus paper to red
- Rasa masam
Sour taste
- Menghasilkan gelembung gas apabila bertindak balas dengan serbuk zink
Release gas bubbles when reacted with zinc powder

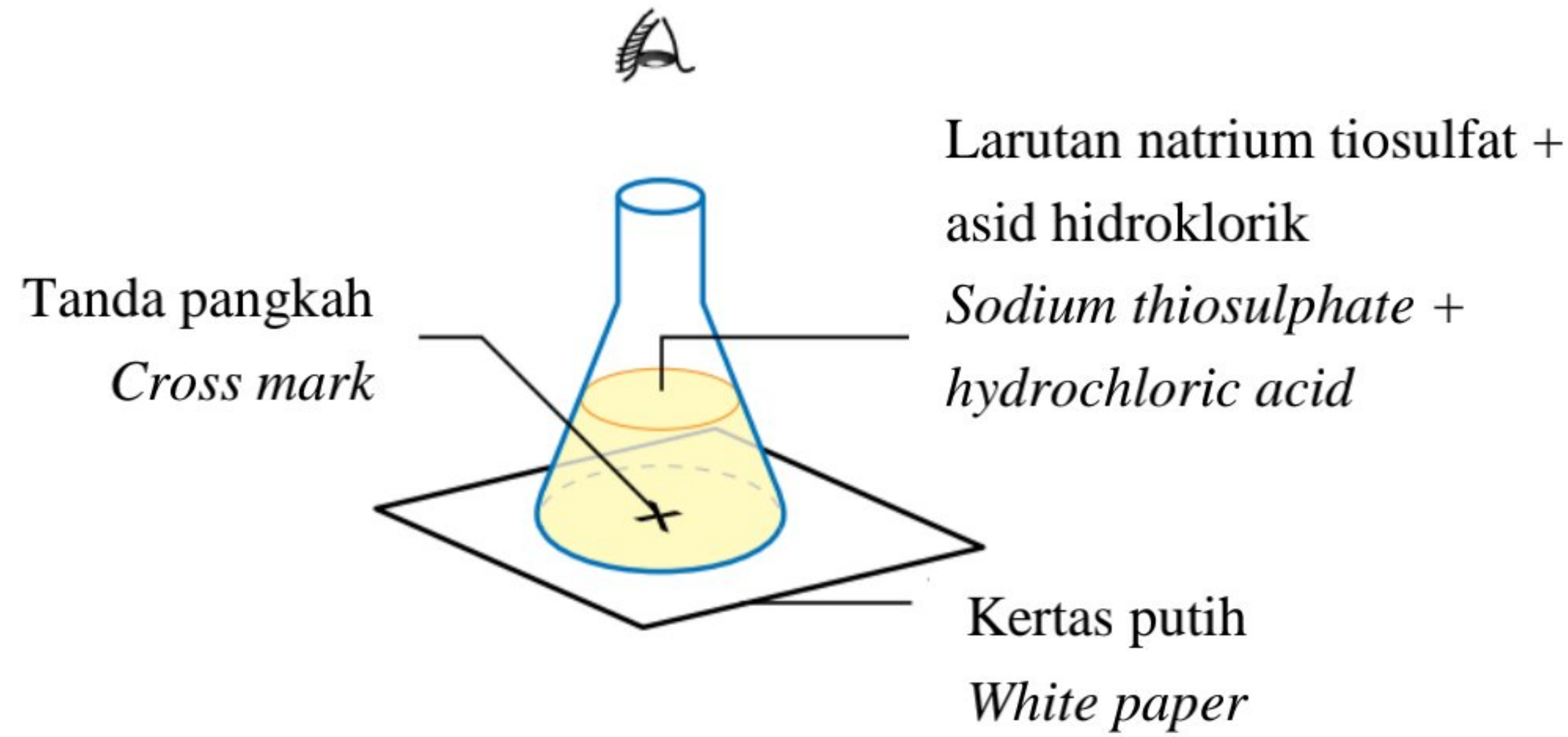
Apakah formula molekul bagi bahan X?

What is the molecular formula of substance X?

- A C_2H_6
- B $\text{C}_2\text{H}_5\text{OH}$
- C CH_3COOH
- D $\text{CH}_2\text{COOC}_2\text{H}_5$

- 10** Rajah 2 menunjukkan susunan radas bagi suatu eksperimen untuk menentukan kadar tindak balas.

Diagram 2 shows the apparatus setup of an experiment to determine the rate of reaction.



Rajah 2 / Diagram 2

Antara yang berikut, yang manakah boleh meningkatkan kadar tindak balas?

Which of the following can increase the rate of reaction?

- A** Tuang asid hidroklorik dengan cepat dan berhati-hati
Pour hydrochloric acid quickly and carefully
- B** Rekod masa yang diambil dengan segera apabila tanda pangkah tidak kelihatan
Record the time taken immediately when the cross mark cannot be seen
- C** Tambah air suling ke dalam kelalang kon
Add distilled water into the conical flask
- D** Panaskan larutan natrium tiosulfat sebelum asid hidroklorik ditambah
Heat sodium thiosulphate solution before hydrochloric acid is added

11 Antara yang berikut yang manakah **benar** tentang seramik.



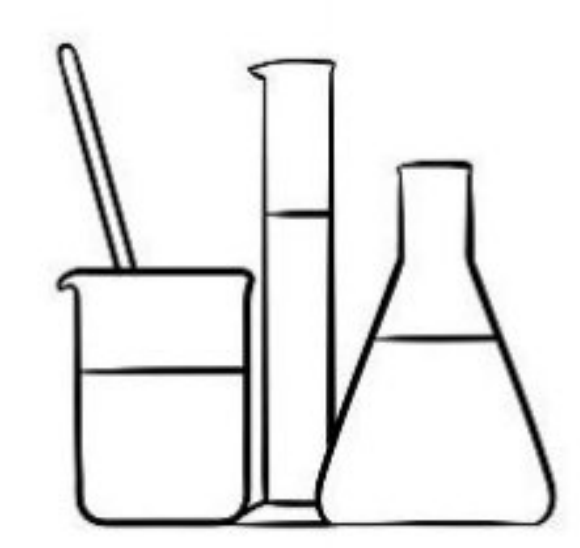

*Which of the following are **true** about ceramic.*

- I Keras tetapi rapuh
Strong but brittle
- II Penebat haba
Heat insulator
- III Keras dan kuat
Hard and strong
- IV Tahan suhu yang tinggi
High thermal resistant

- A I, II, III
- B I, II, IV
- C I, III, IV
- D II, III, IV

12 Antara yang berikut, manakah pasangan kaca dan kegunaanya yang betul ?

Which of the following pairs is the correct type of glass and its use?

	Kegunaan <i>Use</i>	Jenis Kaca <i>Type of glass</i>
A		Kaca soda kapur <i>Soda-lime glass</i>
B		Kaca plumbum <i>Lead crystal glass</i>
C		Kaca borosilikat <i>Borosilicate glass</i>
D		Kaca silika terlakur <i>Fused silica glass</i>

- 13 Antara pernyataan berikut, yang manakah **tidak benar** menerangkan tentang tindak balas penurunan?

*Which of the following statements **does not** correctly describe the reduction reaction?*

- A Kehilangan oksigen
Loss of oxygen
- B Menerima hidrogen
Gain of hydrogen
- C Kehilangan elektron
Loss of electrons
- D Nombor pengoksidaan berkurang
The oxidation number decreases

- 14 Antara berikut, yang manakah menunjukkan pasangan siri homolog dengan kumpulan berfunksinya yang betul?

Which of the following shows the correct pair of homologous series and its functional group?

	Siri homolog <i>Homologous series</i>	Kumpulan berfungsi <i>Functional group</i>
A	Asid karboksilik <i>Carboxylic acid</i>	Karboksilat <i>Carboxylate</i>
B	Alkohol <i>Alcohol</i>	Hidroksil <i>Hydroxyl</i>
C	Alkena <i>Alkene</i>	Ikatan ganda tiga antara atom karbon <i>Triple bond between carbon atoms</i>
D	Alkuna <i>Alkyne</i>	Ikatan ganda dua antara atom karbon <i>Double bond between carbon atoms</i>

- 15** Rajah 3 menunjukkan salah satu kegunaan sebatian karbon dalam kehidupan harian.
Diagram 3 shows a uses of carbon compound in daily life.



Rajah 3 / Diagram 3

Apakah siri homolog bagi sebatian karbon tersebut?

What is the homologous series for this carbon compound.

- A** Ester
Ester
 - B** Alkana
Alkane
 - C** Alkohol
Alcohol
 - D** Asid karbosilik
Carboxylic acid
- 16** Antara proses berikut, yang manakah menyerap haba daripada persekitaran?
Which of the following processes absorb heat from surrounding?
- A** Respirasi
Respiration
 - B** Pengaratan
Rusting
 - C** Pembakaran
Combustion
 - D** Fotosintesis
Photosynthesis

- 17** Mengapa kereaktifan unsur Kumpulan 17 berkurang apabila menuruni kumpulan?
Why does the reactivity of Group 17 elements decrease when going down the group?
- A** Keadaan fizik bagi unsur berubah daripada gas kepada cecair dan kemudian kepada pepejal pada suhu bilik
The physical state of the elements change from gas to liquid then to solid at room temperature
- B** Elektron valens semakin jauh dari nukleus
The valence electrons get further away from the nucleus
- C** Daya tarikan antara elektron valens dengan nukleus semakin kuat
The attractive force between valence electrons and the nucleus becomes stronger
- D** Takat lebur bagi unsur menurun
The melting points of the elements decrease

- 18** Rajah 4 menunjukkan Jadual Berkala Unsur yang tidak lengkap. P dan Q bukan simbol sebenar bagi unsur.
- Diagram 4 shows an incomplete Periodic Table of Elements. P and Q are not the actual symbol for the elements.*

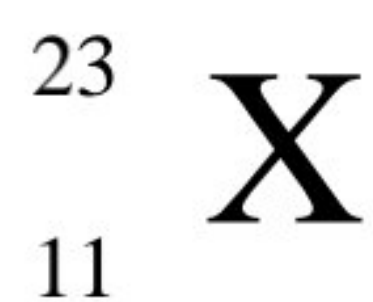
[illegible]Rajah 4 / *Diagram 4*

Unsur P boleh bertindak balas dengan unsur Q menghasilkan satu sebatian ion. Antara yang berikut, yang manakah persamaan kimia bagi tindak balas ini?

Element P can react with element Q to produce an ionic compound. Which of the following is the chemical equation for this reaction?

- A** $P + Q \rightarrow PQ$
B $P + Q_2 \rightarrow PQ_2$
C $P + 2Q \rightarrow PQ_2$
D $2P + Q_2 \rightarrow 2PQ$

- 19 Rajah 5 menunjukkan perwakilan piawai bagi atom unsur X.
Diagram 5 shows the standard representation of atom of element X.



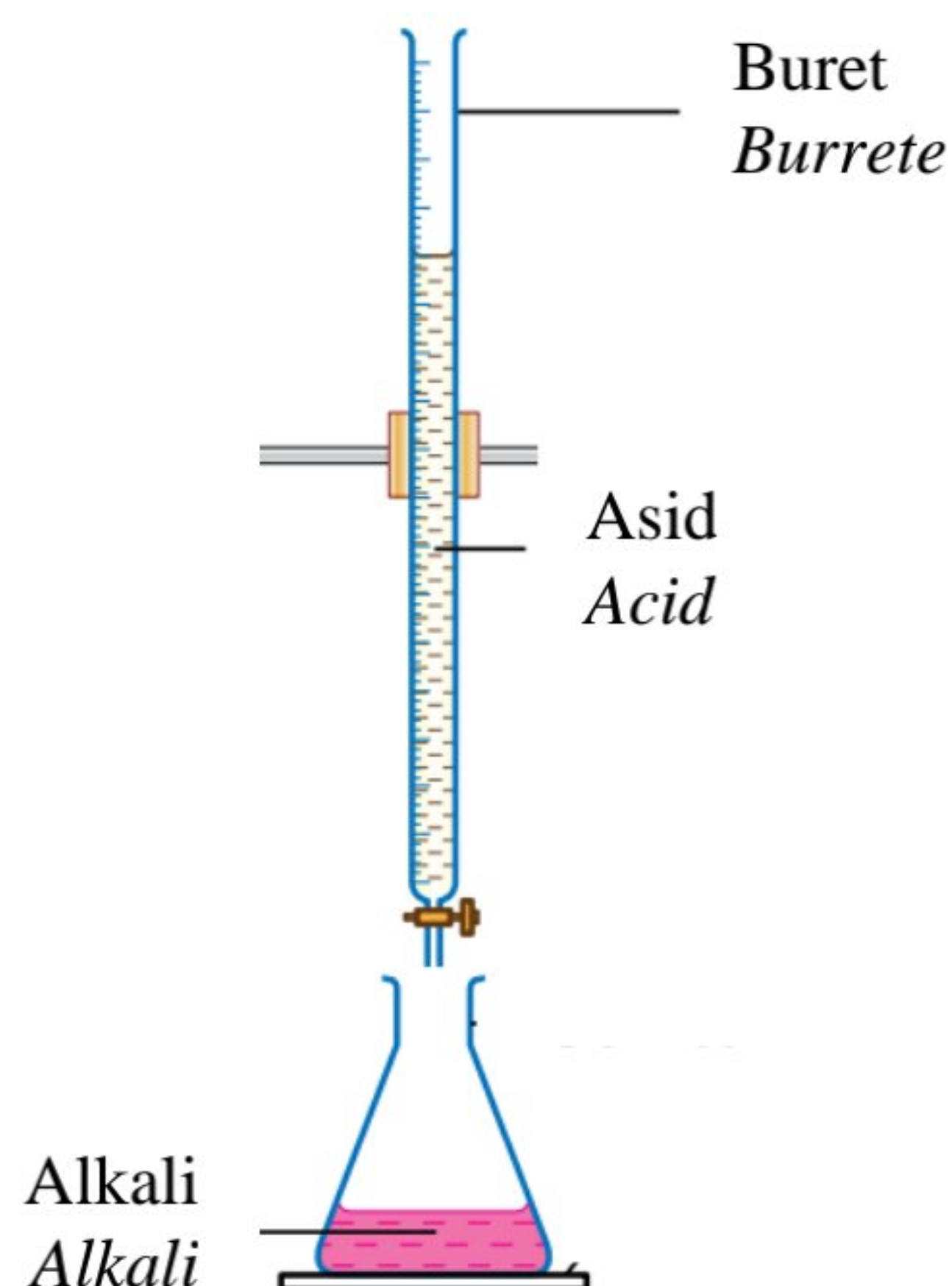
Rajah 5 / *Diagram 5*

Yang manakah antara atom unsur berikut yang akan membentuk sebatian ion dengan unsur X dan formula kimia yang betul bagi sebatian tersebut?

Which of the following atoms of element will form an ionic compound with element X and the correct chemical formula for the compound?

	Unsur <i>Element</i>	Formula kimia <i>Chemical formula</i>
A	$\begin{array}{c} 12 \\ 6 \end{array} \text{Y}$	X_2Y_3
B	$\begin{array}{c} 12 \\ 6 \end{array} \text{Y}$	YX_4
C	$\begin{array}{c} 16 \\ 8 \end{array} \text{Z}$	X_2Z
D	$\begin{array}{c} 16 \\ 8 \end{array} \text{Z}$	ZX_2

- 20 Rajah 6 menunjukkan satu kaedah penyediaan garam terlarutkan.
Diagram 6 shows a method to prepare a soluble salt.



Rajah 6 / Diagram 6

Antara garam berikut, yang manakah boleh disediakan melalui kaedah di atas?

Which of the following salts can be prepared by the method above?

- A** Ammonium nitrat
Ammonium nitrate
- B** Kuprum(II) sulfat
Copper(II) sulphate
- C** Magnesium klorida
Magnesium chloride
- D** Kalsium karbonat
Calcium carbonate
- 21 Keupayaan elektrod piawai bagi dua tindak balas sel setengah ditunjukkan di bawah.
The standard electrode potential for two half-cells equation are shown below.

Tindak balas sel setengah <i>half-cells equation</i>	E^0 (298K)
$\text{Fe}^{3+} + \text{e}^- \rightleftharpoons \text{Fe}^{2+}$	$E^0 = + 0.77 \text{ V}$
$\text{Ni}^{2+} + 2\text{e}^- \rightleftharpoons \text{Ni}$	$E^0 = - 0.25 \text{ V}$

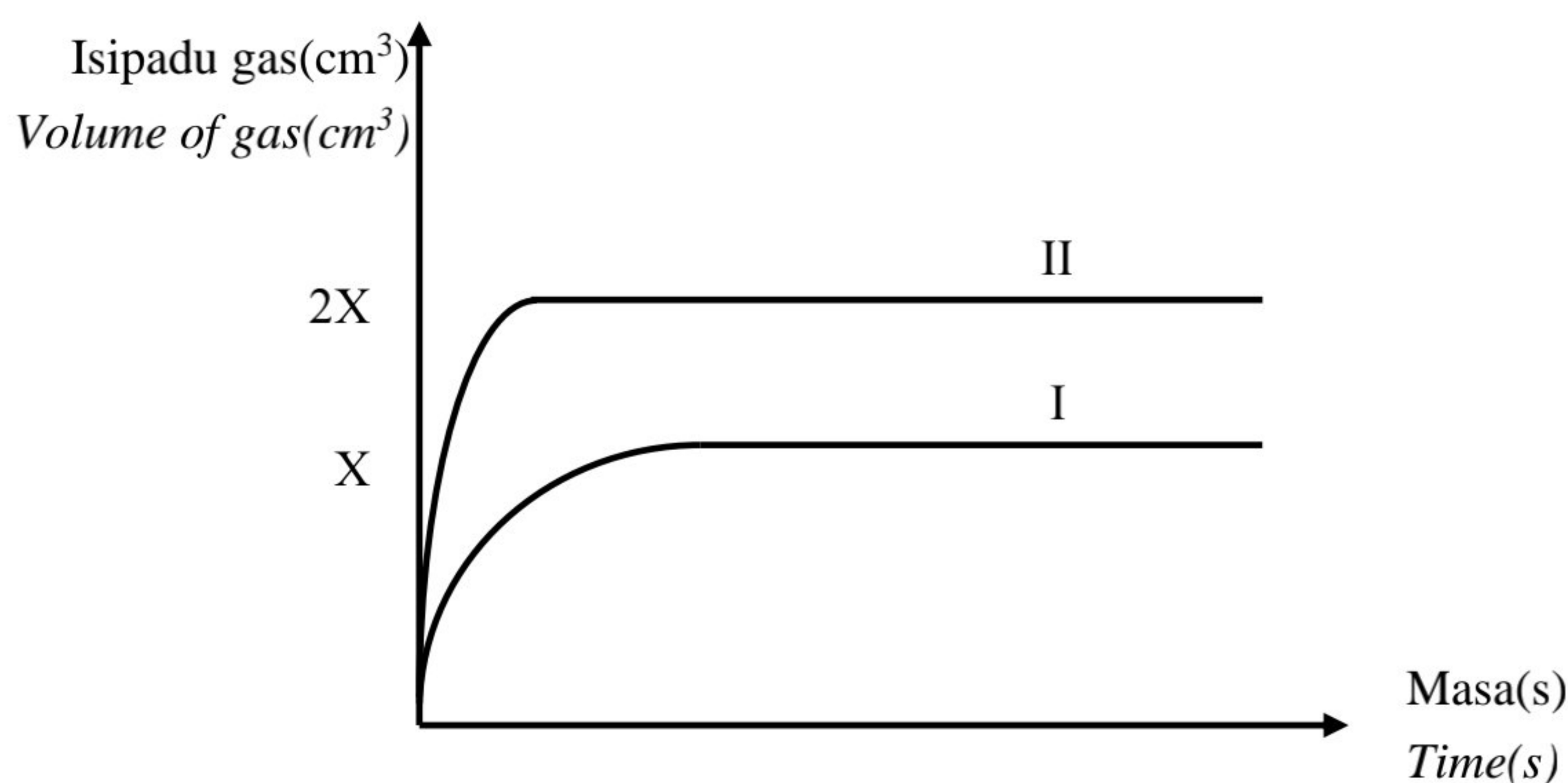
Bahan yang manakah agen penurunan yang paling kuat?

Which substance is the strongest reducing agent?

- A** Fe^{3+}
- B** Fe^{2+}
- C** Ni^{2+}
- D** Ni

- 22 Lengkung I dalam Rajah 7 diperoleh apabila serbuk zink berlebihan bertindak balas dengan 10 cm^3 asid nitrik 0.1 mol dm^{-3} .

Curve I in Diagram 7 is obtained when excess of zinc powder reacts with 10 cm^3 of 0.1 mol dm^{-3} nitric acid.



Rajah 7 / Diagram 7

Antara berikut, yang manakah akan menghasilkan lengkung II dalam Rajah 7?

Which of the following will produce curve II in Diagram 7?

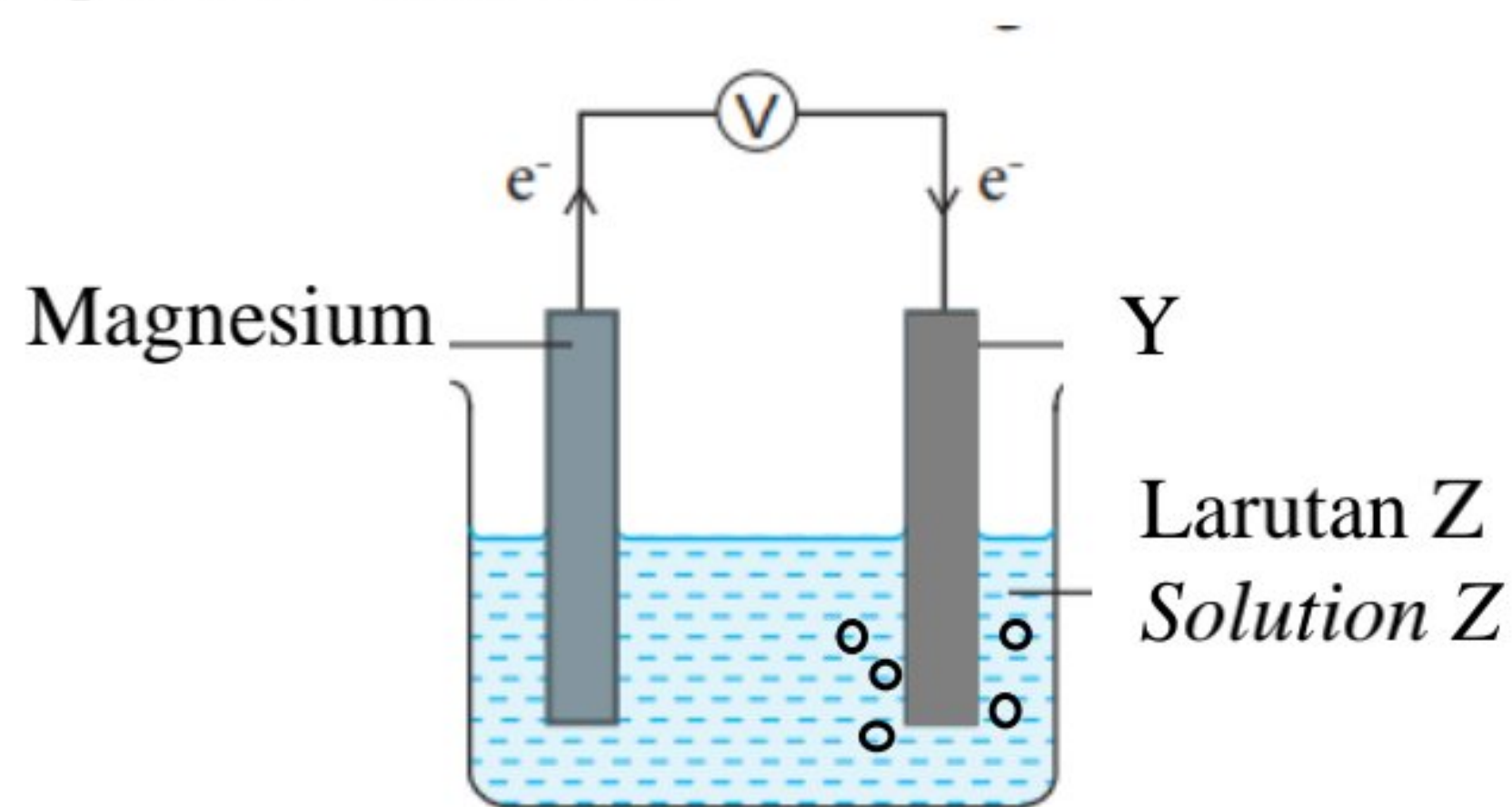
- A Serbuk zink dan 20 cm^3 asid nitrik 0.1 mol dm^{-3}
Zink powder and 20 cm^3 of 0.1 mol dm^{-3} nitric acid
- B Serbuk zink dan 20 cm^3 asid nitrik 0.2 mol dm^{-3}
Zink powder and 20 cm^3 of 0.2 mol dm^{-3} nitric acid
- C Serbuk zink dan 10 cm^3 asid nitrik 0.2 mol dm^{-3}
Zink powder and 10 cm^3 of 0.2 mol dm^{-3} nitric acid
- D Serbuk zink dan 10 cm^3 asid nitrik 0.1 mol dm^{-3}
Zink powder and 10 cm^3 of 0.1 mol dm^{-3} nitric acid

- 23 Sebatian X menukarkan warna perang air bromin kepada tidak berwarna. Apakah siri homolog bagi X?

Compound X changes the brown colour of bromine water to colourless. What is the homologous series for X?

- A Alkana
Alkane
- B Alkena
Alkene
- C Alkohol
Alcohol
- D Asid karboksilik
Carboxylic acid

- 24 Rajah 8 menunjukkan satu sel kimia ringkas.
Diagram 8 shows a simple chemical cell.



Rajah 8 / Diagram 8

Antara berikut, larutan manakah yang sesuai digunakan sebagai larutan Z supaya gelembung gas tidak berwarna terbebas di elektrod Y?

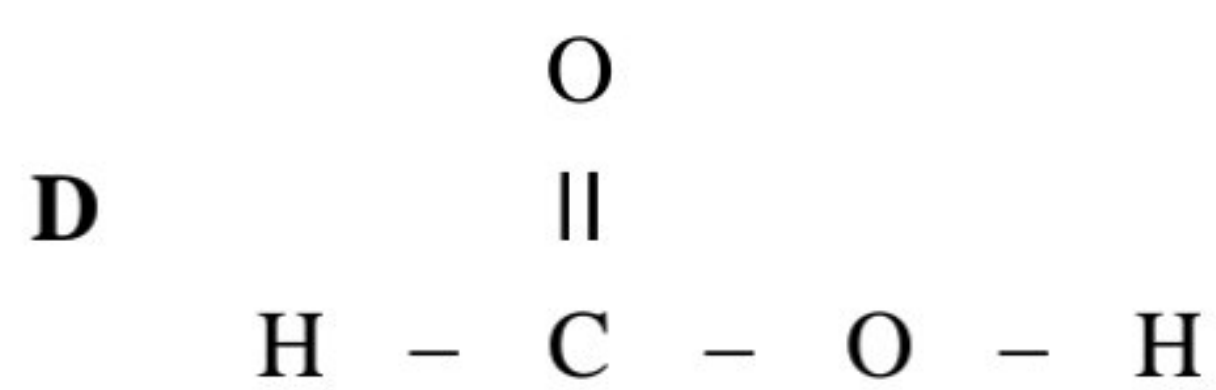
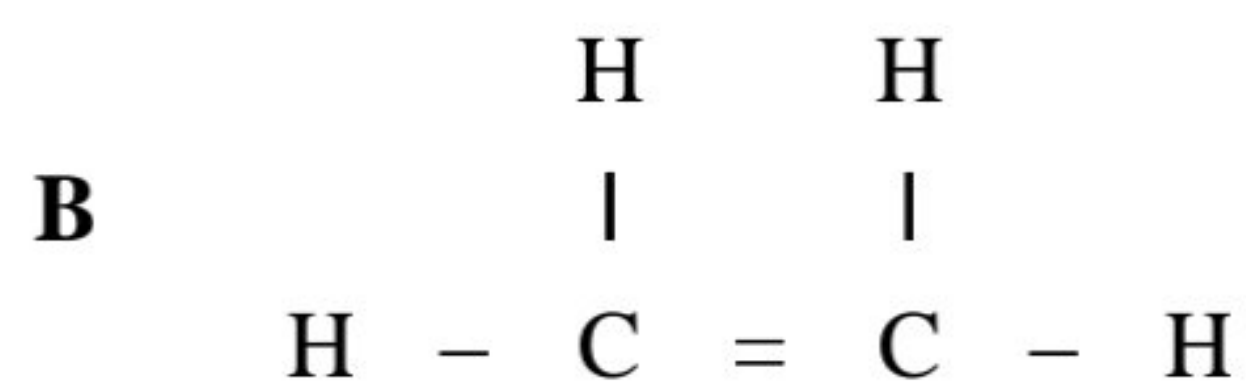
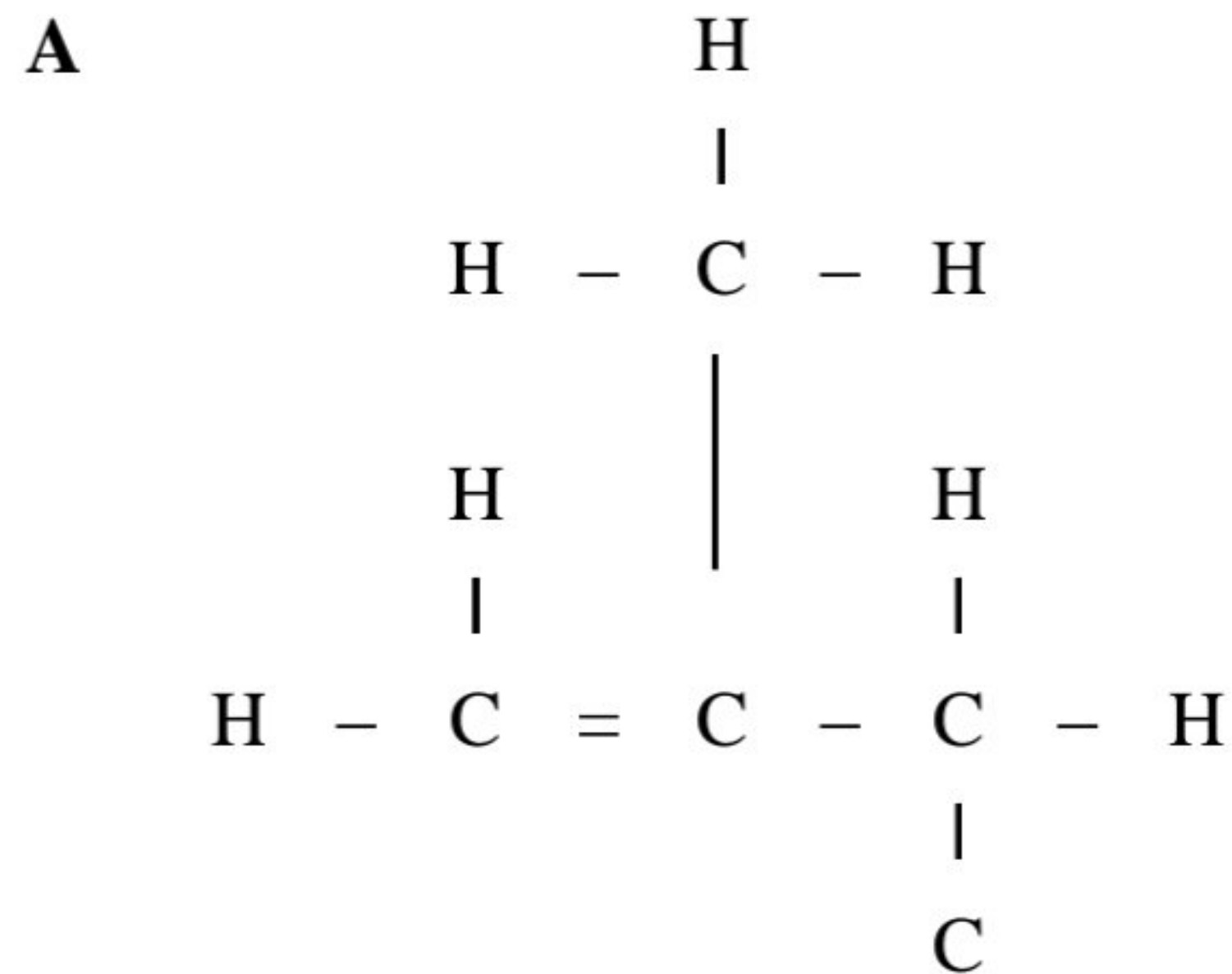
Which of the following solutions are suitable to use as solution Z so colourless gas bubble release at Y electrode?

Persamaan sel setengah <i>Half-cell equation</i>	E^0 (V) (298 K)
$Mg^{2+} + 2e \rightleftharpoons Mg$	-2.38
$Zn^{2+} + 2e \rightleftharpoons Zn$	-0.76
$Ag^+ + e \rightleftharpoons Ag$	+0.80
$Cu^{2+} + 2e \rightleftharpoons Cu$	+0.34
$2H^+ + 2e \rightleftharpoons H_2$	0.00
$Fe^{2+} + 2e \rightleftharpoons Fe$	-0.44

- I Zinc nitrat
Zinc nitrate
- II Kuprum (II) sulfat
Copper (II) sulphate
- III Argentum nitrat
Silver nitrate
- IV Ferum (II) sulfat
Iron (II) sulphate
- A I dan IV
I and IV
- B II dan III
II and III
- C III dan IV
III and IV
- D I dan III
I and III

- 25 Buah-buahan seperti pisang yang sedang masak menghasilkan gas etena secara semula jadi yang menyebabkan buah itu masak. Antara yang berikut yang manakah adalah formula struktur bagi etena?

Ripening fruits such as bananas naturally produce ethene gas which causes the fruit to ripen. Which of the following is the structural formula for ethene?



- 26 Rajah 9 ialah formula molekul yang mewakili satu sebatian organik.
Diagram 9 is a molecular formula which represents an organic compound.



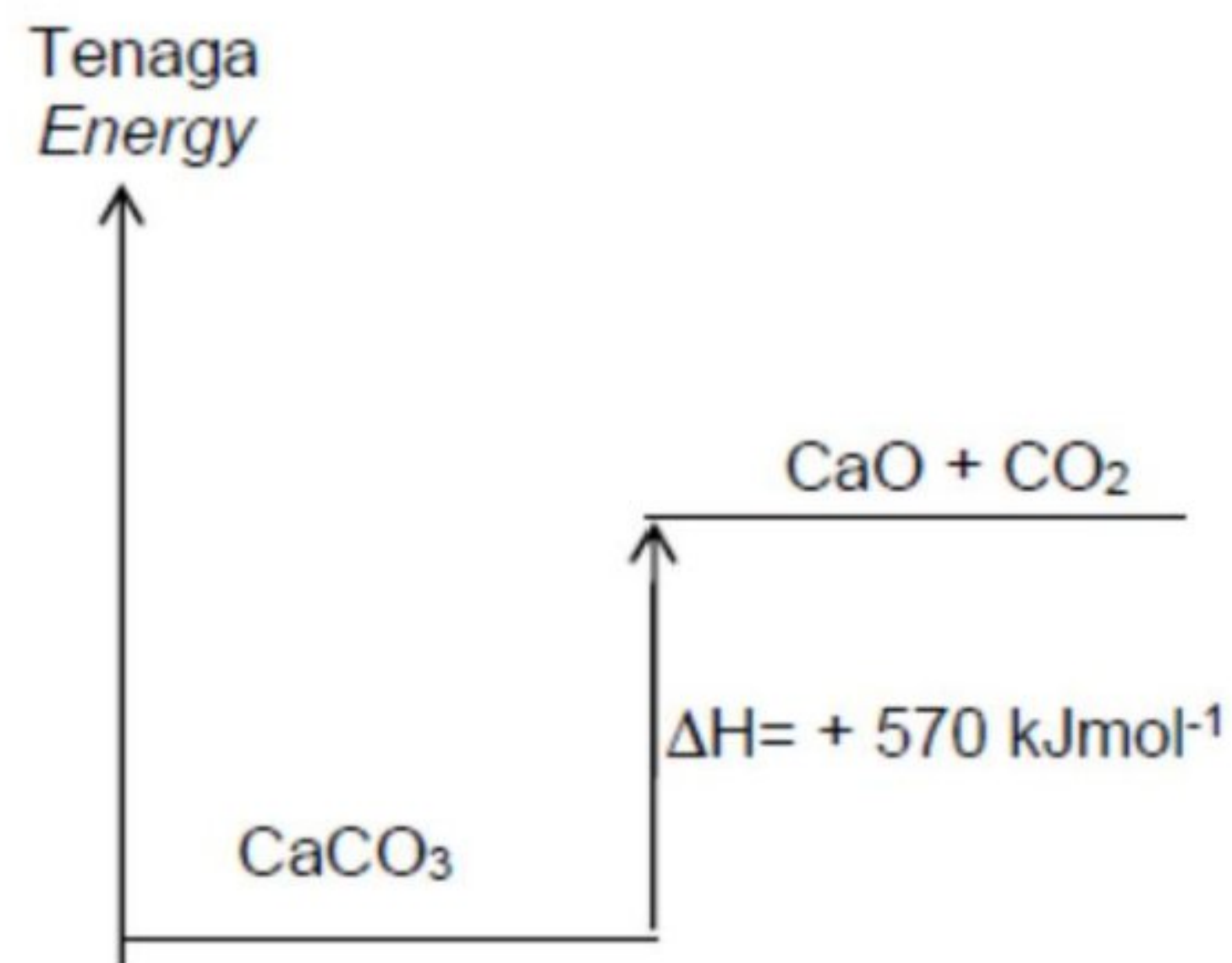
Rajah 9 / Diagram 9

Apakah nama sebatian organik itu?

What is the name of the organic compound?

- A** Etil etanoat
Ethyl ethanoate
- B** Etil metanoat
Ethyl methanoate
- C** Metil etanoat
Methyl ethanoate
- D** Metil metanoat
Methyl methanoate
- 27 Alkohol terbakar dengan lengkap dalam oksigen menghasilkan gas karbon dioksida dan air. Yang manakah antara alkohol berikut membebaskan haba pembakaran yang paling tinggi?
Alcohol burns completely in oxygen producing carbon dioxide gas and water.
Which of the following alcohols releases the highest heat of combustion?
- A** Butanol
Butanol
- B** Etanol
Ethanol
- C** Metanol
Methanol
- D** Propanol
Propanol

- 28 Rajah 10 menunjukkan gambar rajah aras tenaga bagi penguraian kalsium karbonat. *Diagram 10 shows an energy level diagram for the decomposition of calcium carbonate.*



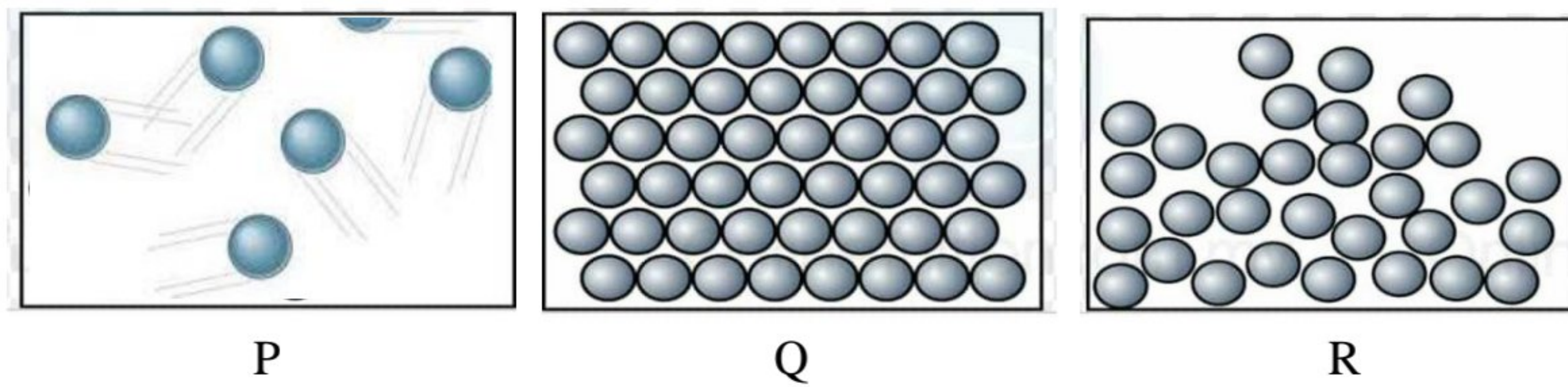
Rajah 10 / Diagram 10

Penyataan manakah boleh dirumuskan daripada Rajah 10?

Which statement can be deduced from Diagram 10?

- A Haba diserap dalam tindak balas itu
Heat is absorbed in the reaction
- B Bahan tindak balas mempunyai jumlah kandungan tenaga lebih tinggi daripada hasil tindak balas
The reactant has higher total energy content than the products
- C Tindak balas eksotermik
Exothermic reaction
- D Semasa tindak balas suhu campuran meningkat
Temperature of mixture increased during the reaction

- 29 Rajah 11 menunjukkan susunan zarah bagi bahan P, Q dan R pada suhu bilik.
Diagram 11 shows the arrangement of particles for materials P, Q and R at room temperature.



Rajah 11 / Diagram 11

Apakah bahan P, Q dan R.

What are the substances of P, Q and R.

	P	Q	R
A	Bromin <i>Bromine</i>	Magnesium <i>Magnesium</i>	Oksigen <i>Oxygen</i>
B	Oksigen <i>Oxygen</i>	Bromin <i>Bromine</i>	Magnesium <i>Magnesium</i>
C	Oksigen <i>Oxygen</i>	Magnesium <i>Magnesium</i>	Bromin <i>Bromine</i>
D	Magnesium <i>Magnesium</i>	Bromin <i>Bromine</i>	Oksigen <i>Oxygen</i>

- 30 Persamaan berikut mewakili tindak balas antara ketulan zink dengan asid hidroklorik.
The following equation represents the reaction between zinc granule and hydrochloric acid.



Berapakah isipadu gas hidrogen yang terhasil apabila 50 cm³ asid hidroklorik 1.0 mol dm⁻³ bertindak balas lengkap dengan 5 g ketulan zink pada suhu bilik?
What is the volume of the gas hydrogen produced when 50 cm³ of 1.0 mol dm⁻³ hydrochloric acid react completely with 5 g of zinc granule at room temperature?
[Jisim atom relatif: Zn= 65, Isipadu molar gas pada keadaan bilik = 24 dm³ mol⁻¹]
[Relative atomic mass: Zn= 65, Molar volume of gas at room condition=24 dm³ mol⁻¹]

- A 1.88 dm³
B 0.60 dm³
C 1.20 dm³
D 3.75 dm³
- 31 Silikon adalah unsur yang digunakan secara meluas dalam penghasilan mikrocip. Ciri yang manakah membolehkan silikon digunakan sebagai mikrocip dalam industri?
Silicon is an element that is widely used in the production of microchips. Which property allows silicon to be used as a microchip in industry?
- A Tahan karat
Resistant to corrosion
B Mempunyai ketumpatan yang rendah
Have low densities
C Kekuatan mampatan yang tinggi
High compression strength
D Konduktor elektrik yang baik pada suhu yang tinggi
Good electrical conductor at high temperature
- 32 Seorang murid disengat oleh penyengat. Bahan yang manakah paling sesuai disapukan untuk merawat murid itu dengan segera?
A student was stung by a wasp. Which substance is best applied to treat the student immediately?
- A Serbuk penaik
Baking powder
B Ubat gigi
Toothpaste
C Cuka
Vinegar

- 33 Jadual 2 menunjukkan nilai keupayaan elektrod piawai, E^0 bagi beberapa tindak balas sel setengah.

Table 2 shows the value of standard electrode potential, E^0 of several half equation reactions.

Persamaan sel setengah <i>Half-cell equation</i>	E^0 (V) <i>(298 K)</i>
$\text{Mg}^{2+} + 2\text{e} \rightleftharpoons \text{Mg}$	-2.38
$\text{Zn}^{2+} + 2\text{e} \rightleftharpoons \text{Zn}$	-0.76
$\text{Ag}^+ + \text{e} \rightleftharpoons \text{Ag}$	+0.80
$\text{Cu}^{2+} + 2\text{e} \rightleftharpoons \text{Cu}$	+0.34

Jadual 2 / Table 2

Antara berikut, pasangan logam yang manakah akan menghasilkan nilai voltan yang paling besar dalam sel kimia?

Which of the following pair of metals will produces the highest voltage in chemical cell?

I Magnesium

Magnesium

II Zink

Zinc

III Argentum

Silver

IV Kuprum

Copper

A I dan III

I and III

B I dan IV

I and IV

C II dan III

II and III

D III dan IV

III and IV

- 34** Jisim molekul relatif bagi $J_2(SO_4)_3$ ialah 342. Berapakah jisim atom relatif bagi unsur J?
The relative molecular mass of $J_2(SO_4)_3$ is 342. What is the relative atomic mass of element J?
 [Jisim atom relatif: O = 16, S = 32]
 [Relative atomic mass: O = 16, S = 32]
- A** 27
 - B** 54
 - C** 118
 - D** 123
- 35** Manisah berasa silau dengan cahaya matahari ketika dia berehat di ruang tamu rumahnya. Dia ingin menukar kaca tingkap untuk menyelesaikan masalah itu. Kaca tingkap yang baharu perlu mengandungi bahan K. Apakah bahan K?
Manisah felt the glare of the sunlight as she rested in her living room. She wanted to change the glass window to solve the problem. The new window should contain substance K. What is substance K?
- A** Magnesium karbonat
Magnesium carbonate
 - B** Boron oksida
Boron oxide
 - C** Argentum klorida
Silver chloride
- 36** Penghasilan baju renang yang diperbuat daripada polimer sintetik neoprena membolehkan baju renang meregang lima hingga enam kali daripada panjang asalnya. Antara berikut, pernyataan manakah yang paling sesuai untuk menjelaskan sifat neoprena.
Production of swimsuits made from the synthetic polymer neoprene allows the swimsuit to stretch five to six times of its original length. Which of the following statement best describe the properties of neoprene?
- A** Sangat kenyal
Very elastic
 - B** Ketahanan lelasan yang tinggi
Highly resistant towards abrasion
 - C** Rintang terhadap haba yang tinggi
Resistant towards high heat
 - D** Rintang terhadap minyak dan pelarut
Resistant towards oil and solvent

- 37 Rajah 12 menunjukkan petikan daripada satu artikel.
Diagram 12 shows statement from an article.



TREM BERKUASA HIDROGEN DIBANGUNKAN DI CHINA

Dalam usaha untuk mengurangkan pembebasan gas rumah hijau yang banyak dan berbahaya, syarikat SIFANG telah mencipta trem berkuasa hidrogen pertama di China. Trem tersebut beroperasi sepenuhnya dengan sel bahan api hidrogen. Apabila 1 mol hidrogen dibakar, haba terbebas ialah 282 kJ. Kelajuan yang tertinggi hanyalah 70 kilometer sejam dan digunakan di kawasan bandar sahaja. Trem ini direka untuk membawa 380 penumpang.

HYDROGEN-POWERED TRAMS DEVELOPED IN CHINA

In an effort to reduce the release of large and dangerous greenhouse gases, the SIFANG company has created the first hydrogen-powered tram in China. The tram operates entirely on hydrogen fuel cells. When 1 mole of hydrogen is burned, the heat released is 282 kJ. The highest speed is only 70 kilometers per hour and is used in urban areas only. The tram is designed to carry 380 passengers.

Sumber/source: <http://www.altemative-energy-news.info/hydrogen-powered-tram>

Rajah 12 / Diagram 12

Berapakah tenaga yang dibebaskan apabila 50 g hidrogen dibakar?

What is the energy released when 50 g of hydrogen is burned?

[Jisim atom relatif: H = 1]

[Relative atomic mass: H = 1]

- A 7050 J
- B 70500 J
- C 7050 kJ
- D 70500 kJ

- 38 Rajah 13 menunjukkan label pada sebuah kotak kek nanas tanpa gula.

Diagram 13 shows the label on a box of a sugar-free pineapple cake.

<p><u>Kek Nanas [tanpa gula]</u> <u>Pineapple cake [sugar-free]</u></p> <p>Bahan-bahan: Tepung gandum, telur, marjerin, sorbitol, etil butanoat, asid askorbik, pektin, pewarna sunset yellow, garam.</p> <p><i>Ingredients:</i> <i>Wheat flour, eggs, margarine, sorbitol, ethyl butanoate, ascorbic acid, pectin, sunset yellow colouring, salt.</i></p>
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Rajah 13 / Diagram 13

Bahan manakah yang memberikan rasa nanas?

Which of the following ingredients gives the pineapple flavour?

- A Pektin
Pectin
- B Sorbitol
Sorbitol
- C Asid askorbik
Ascorbic acid
- D Etil butanoat
Ethyl butanoate

- 39 Seorang pelajar menjalankan aktiviti makmal untuk membina bateri ringkas menggunakan pepejal naftalena, $C_{10}H_8$. Setelah litar lengkap dipasang, jarum voltmeter tidak terpesong.

Antara pernyataan berikut yang manakah langkah yang perlu diambil oleh pelajar tersebut supaya jarum voltmeter terpesong?

A student conduct a laboratory activity to build a simple battery using solid naphthalene, $C_{10}H_8$. After complete circuit is assembled, the voltmeter needle is not deflected.

Which of the following statements is the step that the student should take so that the voltmeter needle is deflected?

- A Melarutkan pepejal naftalena dengan air suling
Dissolve naphthalene in distilled water
- B Panaskan pepejal naftalena sehingga melebur
Heat solid naphthalene until melted
- C Menggantikan pepejal naftalena dengan pepejal magnesium klorida
Replace solid naphthalene with solid magnesium chloride
- D Menggantikan pepejal naftalena dengan larutan magnesium klorida
Replace solid naphthalene with magnesium chloride solution

- 40 Rajah 14 menunjukkan dialog antara seorang guru dengan muridnya, Anis di dalam makmal.

Diagram 14 shows a dialogue between a teacher and her student, Anis in a laboratory.

Anis	: Cikgu, bagaimana untuk mengenal pasti kation dalam larutan X nitrat ini? <i>Teacher, how to identify the cation in this X nitrate solution?</i>
Cikgu	: Jika kamu tambah larutan natrium hidroksida, mendakan putih larut dalam larutan natrium hidroksida berlebihan tetapi jika larutan X nitrat di tambah kepada larutan kalium iodida, mendakan kuning terhasil.
Teacher	<i>If you add sodium hydroxide solution, white precipitate dissolved in excess sodium hydroxide solution but when X nitrate solution is added to potassium iodide solution, yellow precipitate is produced</i>
Anis	: Terima kasih cikgu. <i>Thanks teacher.</i>

Rajah 14 / Diagram 14

Berdasarkan Rajah 14, apakah larutan X nitrat?

Based on Diagram 14, what is solution X nitrate?

- A Kalsium nitrat
Calcium nitrate
- B Zink nitrat
Zinc nitrate
- C Magnesium nitrat
Magnesium nitrate
- D Plumbum (II) nitrat
Lead (II) nitrate

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER