30 Unsur X dan Y terletak dalam Kumpulan 17 di dalam Jadual Berkala Unsur.
Elements X *and* Y *are located in Group* 17 *in the Periodic Table of Elements.*

- Y lebih reaktif daripada X
  Y *is more reactive than* X
- Takat lebur Y lebih rendah daripada X
  The melting point of Y *is lower than* X

Pasangan manakah yang mungkin merupakan unsur bagi X dan Y?
Which one is the possible pair of elements X *and* Y?

	Unsur X ***Element* X**	**Unsur Y** ***Element* Y**
A	Bromin *Bromine*	Iodin *Iodine*
B	Bromin *Bromine*	Klorin *Chlorine*
C	Klorin *Chlorine*	Iodin *Iodine*
D	Florin *Fluorin*	Bromin *Bromine*

31 Persamaan berikut menunjukkan tindak balas untuk mendapatkan garam sulfat terlarutkan.
The following equation shows the reaction to obtain soluble sulphate salt.

$$H_2SO_4 + 2KOH \rightarrow \text{garam sulfat / } \textit{sulphate salt} + 2H_2O$$

Berapakah jisim garam sulfat yang terhasil jika 50 cm^3 0·1 mol dm^{-3} kalium hidroksida digunakan?
[Jisim atom relatif : K = 39, S = 32, O = 16, H = 1]
What is the mass of sulphate salt obtained if 50 cm^3 *of* 0·1 mol dm^{-3} *potassium hydroxide is used*?

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[*Relative atomic mass* : K = 39, S = 32, O = 16, H = 1]

A 0·22 g

B 0·44 g

C 0·87 g

D 1·74 g

32 Suatu persamaan termokimia bagi penyesaran kuprum oleh zink ditunjukkan seperti di bawah.
A thermochemical equation for the displacement of copper by zinc is shown as below.

$$Zn + Cu^{2+} \rightarrow Zn^{2+} + Cu \quad ; \quad = -250 \text{ kJ mol}^{-1}$$

Berapakah kenaikan suhu larutan jika zink berlebihan dilarutkan dalam 50 cm^3 larutan kuprum(II) sulfat 0·2 mol dm^{-3}?
[Muatan haba tentu larutan = 4·2 J g^{-1} $^0C^{-1}$]
What is the increase in temperature of the solution if excess zinc is dissolved in 50 cm^3 *of* 0·2 mol dm^{-3} *copper*(II) *sulphate solution*?
[*Specific heat capacity of solution* = 4·2 J g^{-1} $^0C^{-1}$]

A 11·91 °C

B 15·81 °C

C 20·59 °C

D 23·81 °C

33 Apakah kegunaan asid sulfurik?
What is the use of sulphuric acid?

A Pembuatan detergen
Manufacture of detergent

B Pembuatan kaca
Manufacture of glass

C Pembuatan paip air
Manufacture of water pipe

D Pembuatan seramik
Manufacture of ceramic

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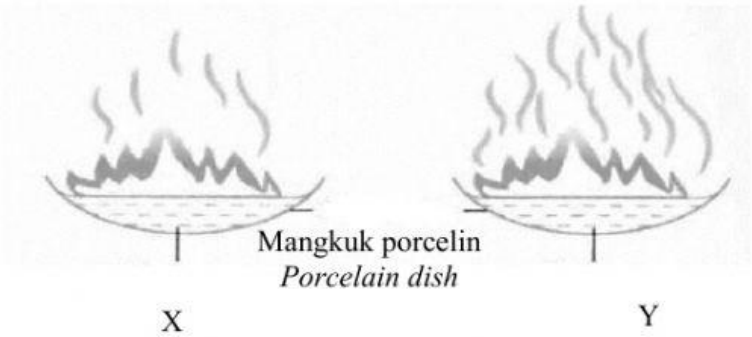
34 Rajah 8 menunjukkan pembakaran dua jenis hidrokarbon, X dan Y yang mempunyai bilangan atom karbon per molekul yang sama.

Diagram 8 *shows combustion of two type of hydrocarbons*, X *and* Y *with same number of carbon atom per molecule.*



Rajah 8 / *Diagram* 8

Pilih pernyataan yang **betul**.

Choose the **correct** *statement.*

A Hidrokarbon Y menyahwarnakan larutan ungu kalium manganat(VII) berasid tetapi hidrokarbon X tidak

Hydrocarbon Y *decolourise purple acidified potassium manganate*(VII) *solution but hydrocarbon* X *cannot*

B Hidrokarbon X menyahwarnakan warna perang air bromin tetapi hidrokarbon Y tidak

Hydrocarbon X *decolourise brown colour bromine water but hydrocarbon* Y *cannot*

C Hidrokarbon Y boleh diperolehi daripada hidrokarbon X

Hydrocarbon Y *can be obtained from hydrocarbon* X

D Hidrokarbon X lebih larut dalam air daripada hidrokarbon Y

Hydrocarbon X *more soluble in water than hydrocarbon* Y

35 Semasa Ahmad berjoging, kakinya terseliuh disebabkan terjatuh. Rajah 9 menunjukkan bahan yang digunakan untuk mengurangkan kesakitan.

During Ahmad jogging, his leg sprained due to a fall. Diagram 9 *shows a substance used for reducing pain.*

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Rajah 9 / *Diagram* 9

Antara bahan yang berikut, yang manakah digunakan dalam bahan itu?

Which of the following substances is used in the substance?

A Kalsium oksida

Calcium oxide

B Kuprum(II) sulfat terhidrat

Hydrated copper(II) *sulphate*

C Magnesium sulfat terhidrat

Hydrated magnesium sulpahte

D Ammonium nitrat

Ammonium nitrate

36 Maklumat berikut menunjukkan tiga bahan.

The following information shows three substances.

- Natrium klorida
  Sodium chloride
- Plumbum(II) bromida
  Lead(II) *bromide*
- Kuprum(II) sulfat
  Copper(II) *sulphate*

Apakah sifat bahan-bahan itu?

What is the property of the substances?

A Takat lebur yang rendah

Low melting point

B Konduktor haba yang baik

Good heat conductor

C Boleh mengkonduksi elektrik dalam keadaan leburan

Can conduct electrify in molten state

D Daya tarikan yang lemah antara zarah-zarah

Weak attraction force between the particles

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37 Antara yang berikut, yang manakah tindak balas redoks?

Which of the following is a redox reaction?

A Pengaratan

Rusting

B Pendidihan

Boiling

C Pemendakan

Precipitation

D Peneutralan

Neutralisation

38 Persamaan berikut mewakili satu tindak balas antara 80 cm^3 asid X 0·1 mol dm^{-3} dan kalsium karbonat berlebihan. Masa yang diambil untuk tindak balas itu lengkap adalah 180 saat.

The following equation represents a reaction between 80 cm^3 *of* 0·1 mol dm^{-3} *acid* X *and excess calcium carbonate. The time taken for the reaction to complete is 180 seconds.*

$$2X + CaCO_3 \rightarrow CaX + CO_2 + H_2O$$

Apakah kadar tindak balas purata tersebut?

What is the average rate of reaction?

[Isi padu molar bagi gas = 24 dm^3 mol^{-1} pada keadaan bilik]

[*Molar volume of gas* = 24 dm^3 mol^{-1} *at room temperature*]

A 0·53 dm^3 s^{-1}

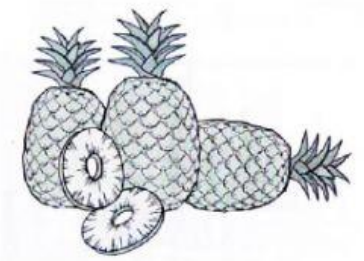
B 0·53 cm^3 s^{-1}

C 0·53 cm^3 min^{-1}

D 0·53 dm^3 min^{-1}

39 Rajah 10 menunjukkan beberapa biji nanas.

Diagram 10 *shows some pineapples.*



Rajah 10 / *Diagram* 10

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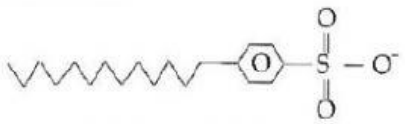
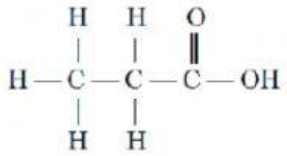
Antara yang berikut, yang manakah menunjukkan struktur ester yang terkandung dalam nanas?

Which of the following shows the structure of the ester that is contained in pineapples?

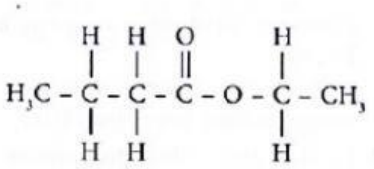
A



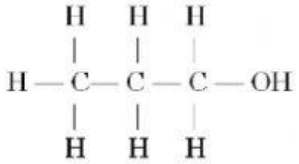
B



C



D



40 Sarina telah menerima sepucuk surat jemputan perkahwinan daripada rakan baiknya, Saruna. Surat yang diterimanya berwarna putih tanpa tulisan padanya. Terdapat satu nota yang disisipkan sebagai panduan.

Sarina received a letter of wedding invitation from her best friend, Saruna. The letter is white in colour without ant writing on it. There is a note enclosed as a guide.

Kepada sahabat, Dakwat yang digunakan : Kuprum(II) oksida Formula : CuO Untuk membaca surat ini, semburkan satu larutan yang akan menghasilkan tulisan berwarna biru.	*Dear friend,* *Ink that was used* : *Copper*(II) *oxide* *Formula* : CuO *To read this letter, spray a solution that will produce blue writing.*

Larutan manakah yang perlu disembur bagi membolehkan Sarina membaca surat tersebut?

Which solution should be sprayed to enable Sarina to read the letter?

A Air

Water

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B Zink sulfat

Zinc sulpahte

C Magnesium nitrat

Magnesium nitrate

D Asid sulfurik cair

Dilute sulphuric acid

Soalan tamat

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