

NAMA : _____

TINGKATAN: _____

PEPERIKSAAN PERCUBAAN SPM TAHUN 2023

KIMIA

4541/1

KERTAS 1

MASA 1 $\frac{1}{4}$ JAM

1jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Kertas soalan ini adalah dalam dwibahasa.

This question paper is in bilingual.

2. Soalan dalam Bahasa Inggeris mendahului soalan yang sepadan dalam Bahasa Melayu.

Questions in English precede the corresponding questions in Malay.

3. Jawab semua soalan.

Answer all questions.

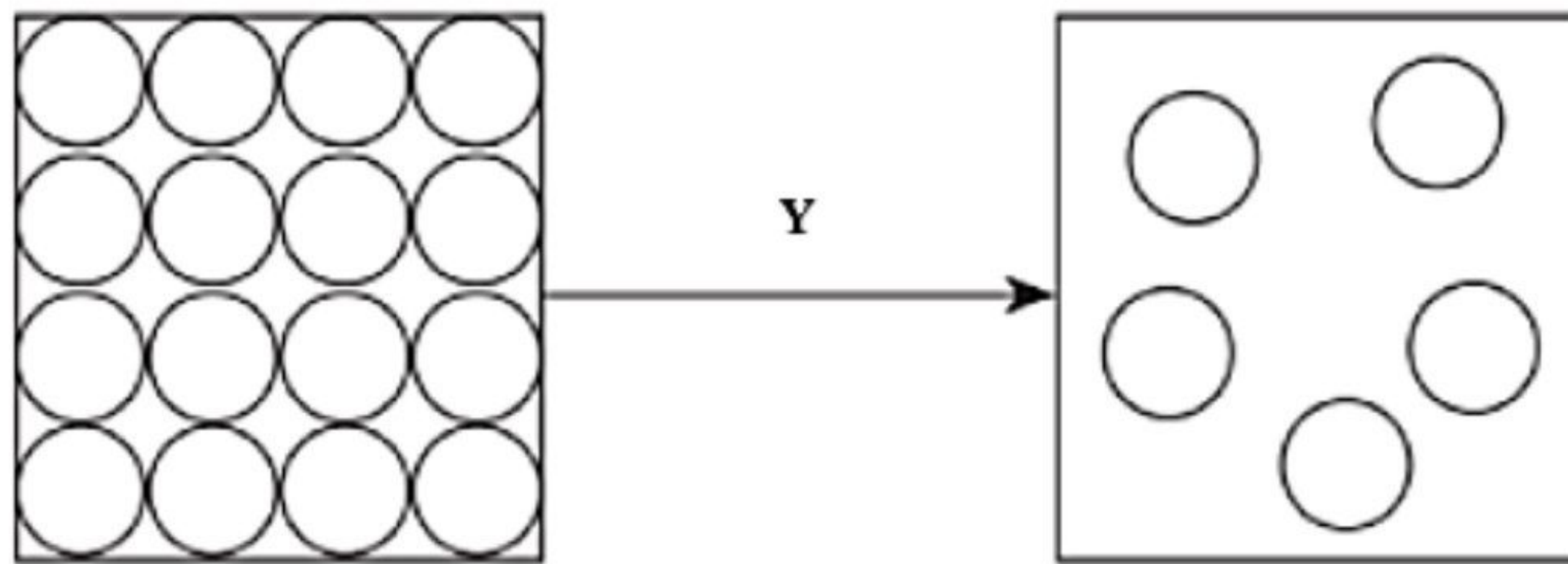
Kertas soalan ini mengandungi 27 halaman bercetak

Jawab semua soalan

Answer all question.

1. Rajah 1 menunjukkan susunan zarah satu bahan yang mengalami perubahan keadaan fizikal apabila melalui proses Y dalam suhu bilik.

Figure 1 shows the arrangement of particles of a substance that undergoes a change in physical state when going through process Y at room temperature.



Rajah 1/ Diagram 1

Antara bahan berikut yang manakah melalui proses Y?

Which of the following substances undergo process Y?

- A** Klorin
Chlorine
- B** Bromin
Bromine
- C** Iodin
Iodine
- D** Oksigen
Oxygen

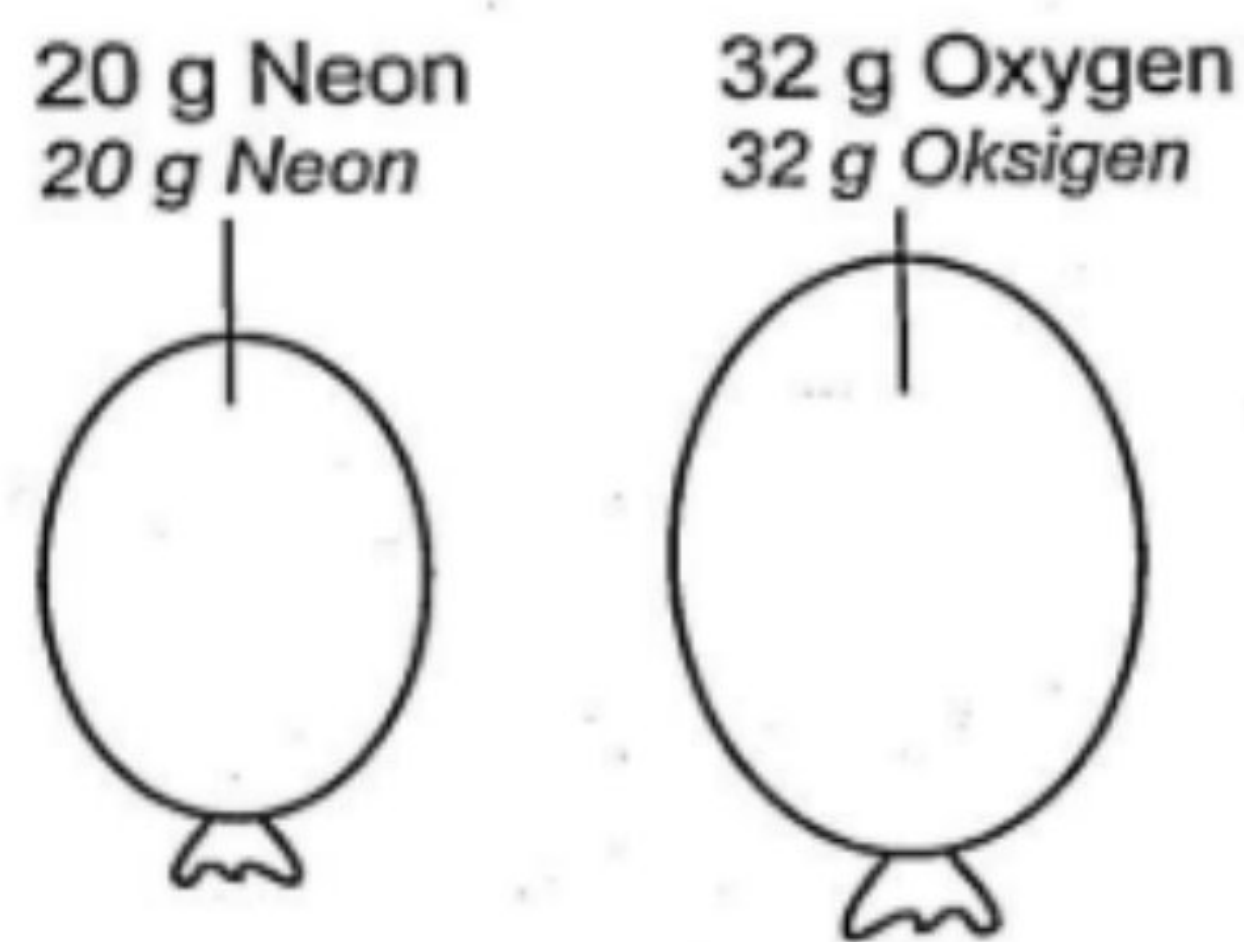
2. Antara berikut, yang manakah merupakan contoh bagi jirim?
Which of the following is an example of matter?
- A Haba
Heat
 - B Udara
Air
 - C Cahaya
Light
3. Antara yang berikut, isotop manakah digunakan untuk mengesan kebocoran paip bawah tanah?
Which of the following isotopes is used to detect leaks in underground pipes?
- A Karbon-14
Carbon-14
 - B Uranium-235
Uranium-235
 - C Natrium-24
Sodium-24
 - D Iodin-131
Iodine-131

4. Antara yang berikut, langkah manakah yang perlu diambil untuk memastikan semua magnesium bertindak balas dengan oksigen dan terbakar sepenuhnya semasa eksperimen menentukan formula empirik magnesium oksida?

Which of the following is the step that should be taken to ensure that all magnesium are reacted with oxygen and burnt completely during the experiment to determine the empirical formulae of magnesium oxide?

- I** Buka dan tutup penutup dengan cepat sekali sekala semasa pemanasan
Open and close the lid quickly occasionally during heating
- II** Panaskan pita magnesium dengan kuat di dalam mangkuk pijar tanpa penutupnya.
Heat the magnesium ribbon strongly in the crucible without its lid
- III** Perhatikan pepejal putih yang terhasil
Observe the white solid produced
- IV** Ulang pemanasan, penyejukan dan penimbangan sehingga jisim tetap diperolehi
Repeat heating, cooling and weighing until a constant mass is obtained
- A** I dan II
I and II
- B** I dan III
I and III
- C** I dan IV
I and IV
- D** III dan IV
III and IV

5. Rajah 2 menunjukkan dua jenis gas yang diisi ke dalam dua biji belon.
Diagram 2 shows two types of gas filled in two balloons.



Rajah 2 / Diagram 2

Pernyataan manakah yang betul tentang bilangan atom dalam gas neon?
[Jisim atom relatif: Ne = 20; O = 16]

Which statement is correct about the number of atoms on neon gas?
[Relative atomic mass: Ne = 20; O = 16]

- A** Sama seperti bilangan molekul gas oksigen
Same as number of molecules in oxygen gas
- B** Mempunyai bilangan molekul yang lebih banyak daripada gas oksigen
More than the number of molecules in oxygen gas
- C** Dua kali lebih sedikit daripada bilangan molekul dalam gas oksigen
Two times less than the number of molecules in oxygen gas
- D** 20 kali lebih banyak daripada bilangan molekul dalam gas oksigen
20 times more than the number of molecules in oxygen gas

6. Rajah 3 di bawah menunjukkan bahan X disimpan dalam minyak parafin.
The diagram 3 below shows substance X stored in paraffin oil.

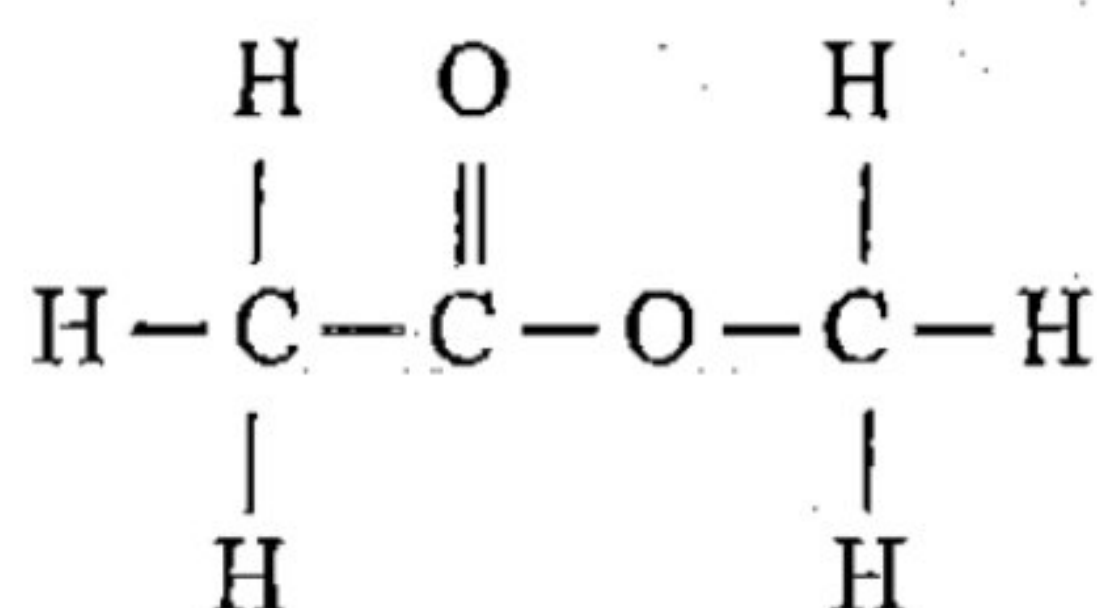


Rajah 3 / Diagram 3

Apakah bahan X?
What is substance X?

- A** Argentum
Silver
- B** Aurum
Gold
- C** Aluminium
Aluminium
- D** Natrium
Sodium

7. Rajah 4 menunjukkan formula struktur satu sebatian.
Diagram 4 shows the structural formulae of a compound.



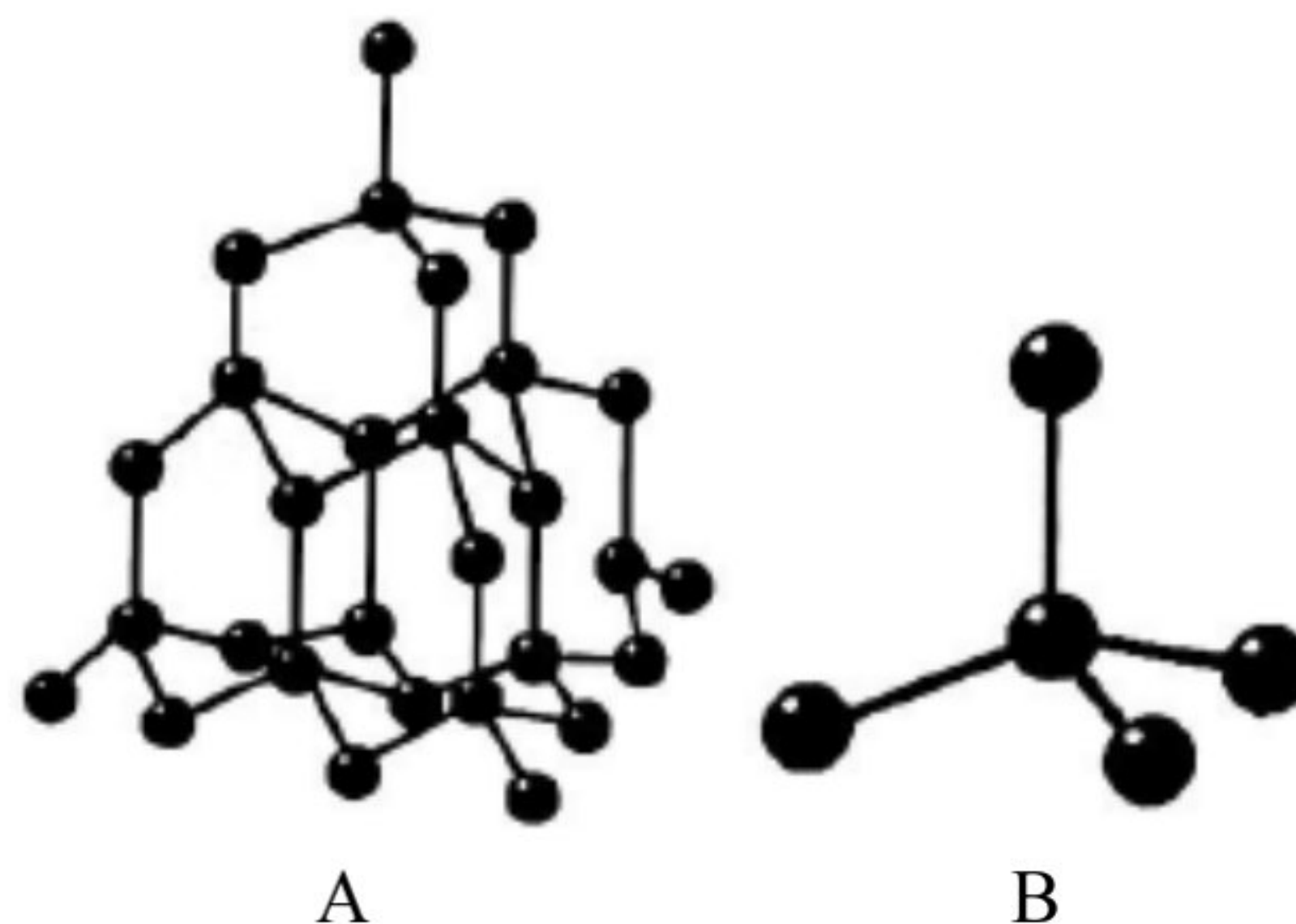
Rajah 4 / Diagram 4

Apakah formula empirik bagi sebatian tersebut?
What is the empirical formulae of that compound?

- A** CHO
- B** C₃H₆O₂
- C** CH₂O₂
- D** C₂H₃O
8. Unsur X bertindak balas dengan unsur Z untuk membentuk satu sebatian kovalen dengan formula XZ₄. Apakah sifat fizikal bagi sebatian kovalen ini?
Element X reacts with element Z to form a covalent compound with a formula XZ₄. What is the physical properties of this covalent compound?
- A** Mengkonduksikan elektrik dalam keadaan akues
Conducting electricity in aqueous condition.
- B** Mudah meruap
Vaporize easily
- C** Mempunyai takat lebur dan takat didih tinggi
Has higher melting point and boiling point
- D** Larut dalam air
Dissolve in water

9. Antara berikut, yang manakah sifat sebatian ion?
Which of the following is the property of ionic compound?
- A** Tidak larut dalam air
Does not dissolve in water
 - B** Larut dalam pelarut organik
Dissolve in organic solvent
 - C** Takat lebur dan takat didih yang tinggi
High melting and boiling points
 - D** Mengkonduksikan elektrik dalam keadaan pepejal
Conducts electricity in solid state

10. Rajah 5 menunjukkan struktur molekul bagi sebatian kovalen A dan B
 Diagram 5 shows the molecular structure for covalent compound A and B.



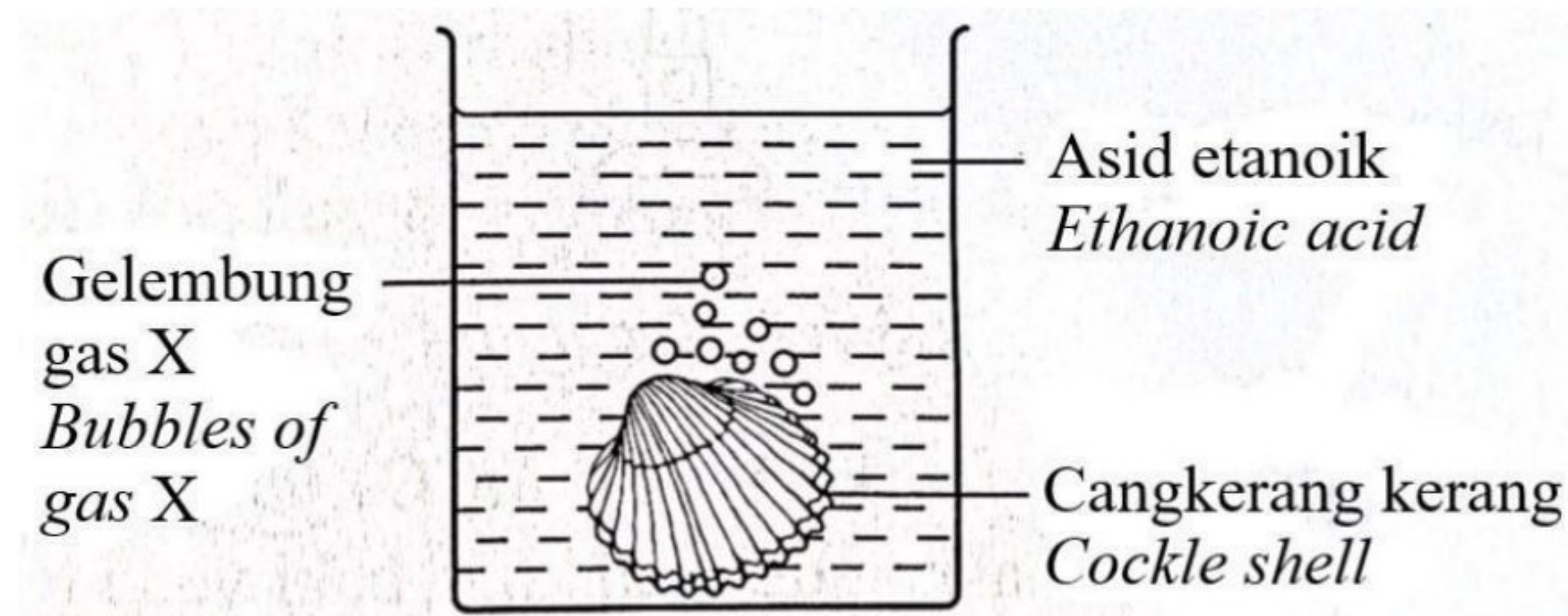
Rajah 5 / Diagram 5

Antara pernyataan berikut, yang manakah tidak benar tentang kedua-dua sebatian di atas?
 Which of the following statements is incorrect about both compounds above?

	A	B
A	Contoh: Berlian <i>Example: Diamond</i>	Contoh: Karbon dioksida <i>Example: Carbon dioxide</i>
B	Struktur gergasi <i>Giant structure</i>	Struktur ringkas <i>Simple structure</i>
C	Ikatan kovalen yang kuat di dalam molekul sahaja dan tiada daya tarikan Van der Waals. <i>Strong covalent bonds in the molecules only and there is no Van der Waals attraction force.</i>	Ikatan kovalen yang lemah di dalam molekul dan ada daya tarikan Van der Waals yang lemah antara molekul. <i>Covalent bonds are weak in the molecules and Van der Waals attraction forces between molecules are weak.</i>
D	Takat lebur tinggi kerana banyak haba diperlukan untuk putus ikatan kovalen yang kuat <i>Higher melting point because a lot of heat is required to break the strong covalent bonds.</i>	Takat lebur rendah kerana sedikit haba diperlukan untuk atasi daya tarikan Van der Waals yang lemah antara molekul. <i>Lower melting point because only little heat is required to overcome the weak Van der Waals attraction forces between molecules</i>

11. Rajah 6 menunjukkan satu pemerhatian apabila cangkerang kerang dimasukkan ke dalam bikar yang mengandungi cuka.

Diagram 6 shows an observation when a cockle shell is put into a beaker containing vinegar.



Rajah 6 / Diagram 6

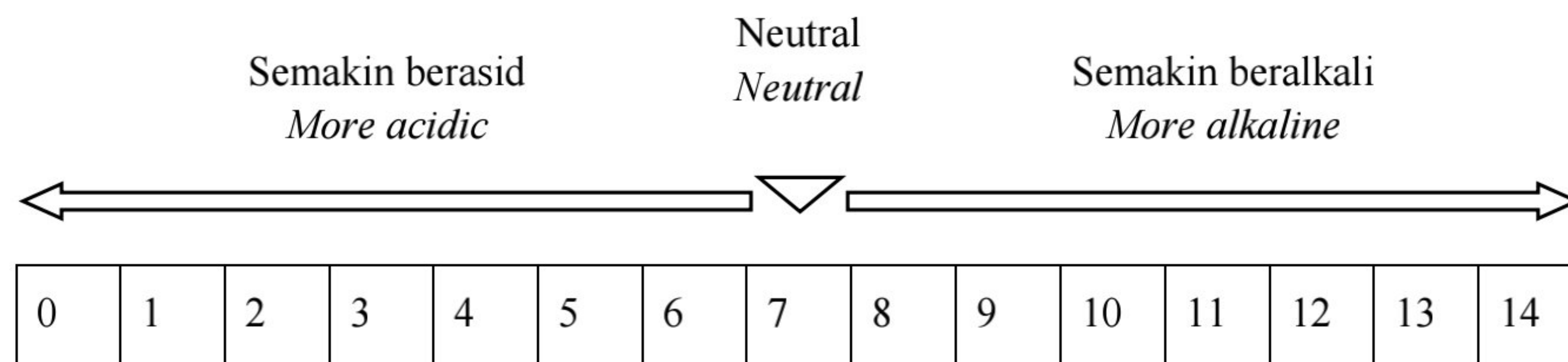
Apakah X?

What is X?

- | | | | |
|----------|--|----------|-----------------------------|
| A | Oksigen
<i>Oxygen</i> | C | Hidrogen
<i>Hydrogen</i> |
| B | Karbon dioksida
<i>Carbon dioxide</i> | D | Nitrogen
<i>Nitrogen</i> |

12. Rajah 2 menunjukkan skala pH. Antara susunan bahan berikut, yang manakah mengikut tertib nilai pH yang semakin meningkat?

Diagram 2 shows the pH scale. Which of the following substances are arranged in the order of increasing pH values?



Rajah 2 / Diagram 2

- | | |
|----------|---|
| A | $H_2CO_3 < HNO_3 < NH_3 \text{ akueus} < KOH$
$H_2CO_3 < HNO_3 < \text{aqueous } NH_3 < KOH$ |
| B | $H_2CO_3 < HNO_3 < KOH < NH_3 \text{ akueus}$
$H_2CO_3 < HNO_3 < KOH < \text{aqueous } NH_3$ |
| C | $HNO_3 < H_2CO_3 < NH_3 \text{ akueus} < KOH$
$HNO_3 < H_2CO_3 < \text{aqueous } NH_3 < KOH$ |
| D | $HNO_3 < H_2CO_3 < KOH < NH_3 \text{ akueus}$
$HNO_3 < H_2CO_3 < KOH < \text{aqueous } NH_3$ |

13. Jadual 1 menunjukkan keputusan eksperimen untuk mengkaji sifat-sifat gas hidrogen klorida dalam pelarut yang berlainan.

Table 1 shows the results of an experiment to study the properties of hydrogen chloride gas in different solvents.

Pelarut Solvent	A	B
Perubahan warna pada kertas litmus biru <i>Colour change on blue litmus paper</i>	Tiada perubahan <i>No change</i>	Biru menjadi merah <i>Blue changes to red</i>

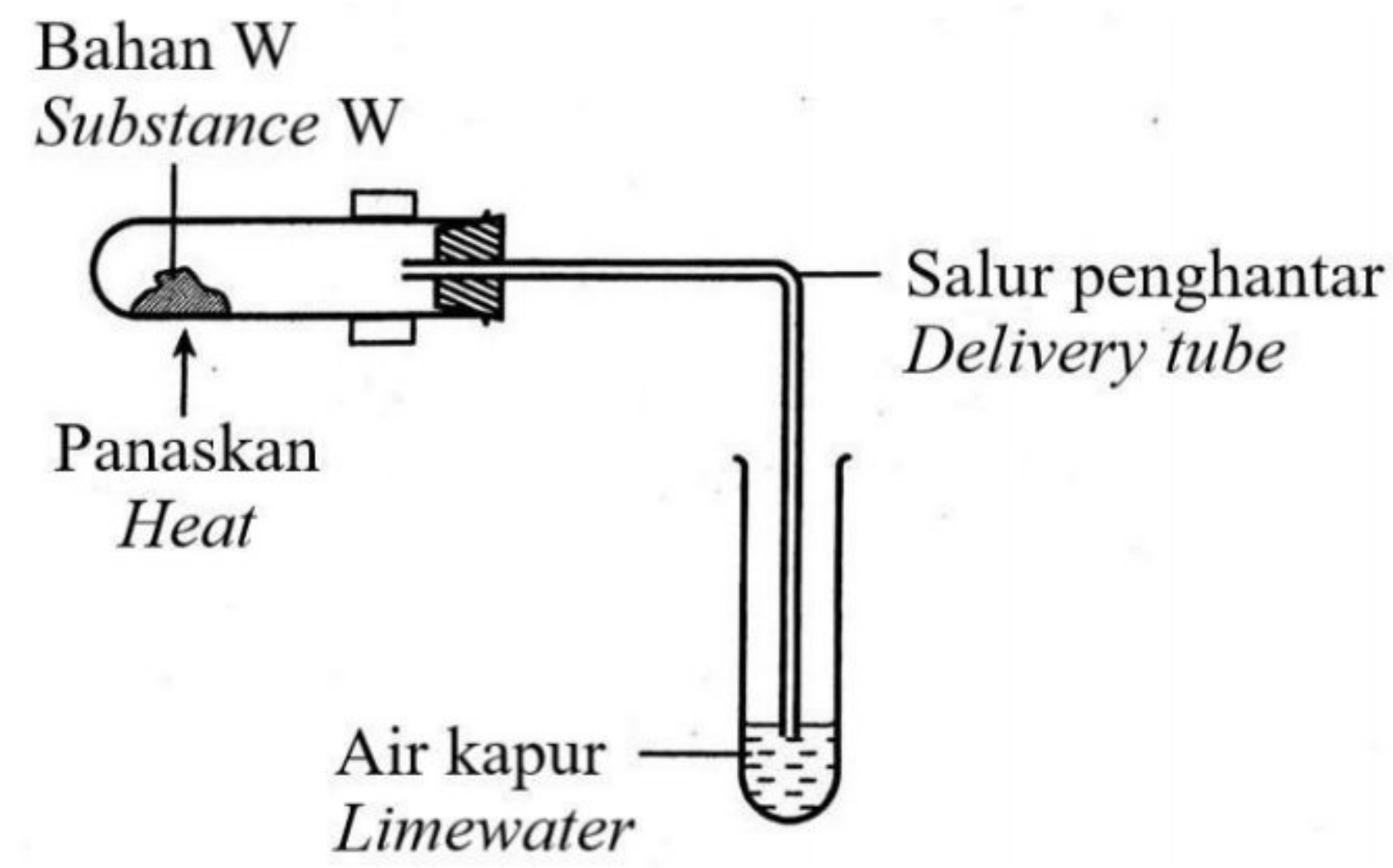
Jadual 1/ Table 1

Apakah pelarut A dan B?

What are solvents A and B?

	Pelarut A Solvent A	Pelarut B Solvent B
A	Metilbenzena <i>Methylbenzene</i>	Air <i>Water</i>
B	Air <i>Water</i>	Metilbenzena <i>Methylbenzene</i>
C	Sikloheksana <i>Cyclohexane</i>	Metilbenzena <i>Methylbenzene</i>

14. Rajah 8 menunjukkan susunan radas bagi mengkaji kesan haba ke atas bahan W. Bahan W berwarna putih. Selepas dipanaskan beberapa minit, air kapur menjadi keruh. Baki yang terhasil berwarna perang semasa panas dan bertukar kuning apabila sejuk. *Diagram 8 shows the apparatus set-up for the effect of heat on substance W. Substance W is white in colour. After heating for a few minutes, the limewater turns cloudy. The residue formed is brown when hot and turns yellow when cold.*



Rajah 8 / Diagram 8

Antara garam berikut, yang manakah bahan W?
Which of the following salts could be substance W?

- | | |
|--|--|
| A Plumbum(II) nitrat
<i>Lead(II) nitrate</i> | C Plumbum(II) karbonat
<i>Lead(II) carbonate</i> |
| B Natrium karbonat
<i>Sodium carbonate</i> | D Zink karbonat
<i>Zinc carbonate</i> |

15. Antara padanan berikut, yang manakah betul bagi kadar tindak balas rendah dan kadar tindak balas tinggi?

Which of the following is the correct match for a low rate of reaction and a high rate of reaction?

	Kadar tindak balas rendah <i>Low rate of reaction</i>	Kadar tindak balas tinggi <i>High rate of reaction</i>
A	Pengaratan besi <i>Rusting of iron</i>	Penapaian glukosa <i>Fermentation of glucose</i>
B	Tindak balas antara larutan natrium hidroksida dengan asid hidroklorik <i>Reaction between sodium hydroxide solution and hydrochloric acid</i>	Pengaratan besi <i>Rusting of iron</i>
C	Penapaian glukosa <i>Fermentation of glucose</i>	Tindak balas antara larutan plumbum(II) nitrat dan larutan kalium iodida <i>Reaction between lead(II) nitrate solution and potassium iodide solution</i>
D	Tindak balas antara larutan plumbum(II) nitrat dan larutan kalium iodida <i>Reaction between lead(II) nitrate solution and potassium iodide solution</i>	Tindak balas antara larutan natrium hidroksida dengan asid hidroklorik <i>Reaction between sodium hydroxide solution and hydrochloric acid</i>

16. Persamaan kimia berikut menunjukkan tindak balas antara asid hidroklorik dengan kalsium karbonat.

The following chemical equation represents the reaction between hydrochloric acid and calcium carbonate.



Antara faktor berikut, yang manakah meningkatkan kadar tindak balas tersebut?

Which of the following factors increases the rate of reaction?

- A** Meningkatkan isi padu asid
Increase the volume of acid
- B** Menambahkan air ke dalam asid
Add water into the acid
- C** Menggunakan serbuk kalsium karbonat
Use calcium carbonate powder
- D** Menggunakan kelalang kon yang lebih kecil
Use a smaller conical flask

17. Puan Mazlin menunjukkan sebiji gelas dan menjelaskan tentang sifat-sifatnya seperti dalam Rajah 9 kepada murid-muridnya.
Puan Mazlin shows a glass and explains its properties as shown in Diagram 9 to her students.



- Barangan kaca hiasan
As decorative glassware
- Indeks biasan tinggi
Have high refractive index
- Berketumpatan tinggi
High density

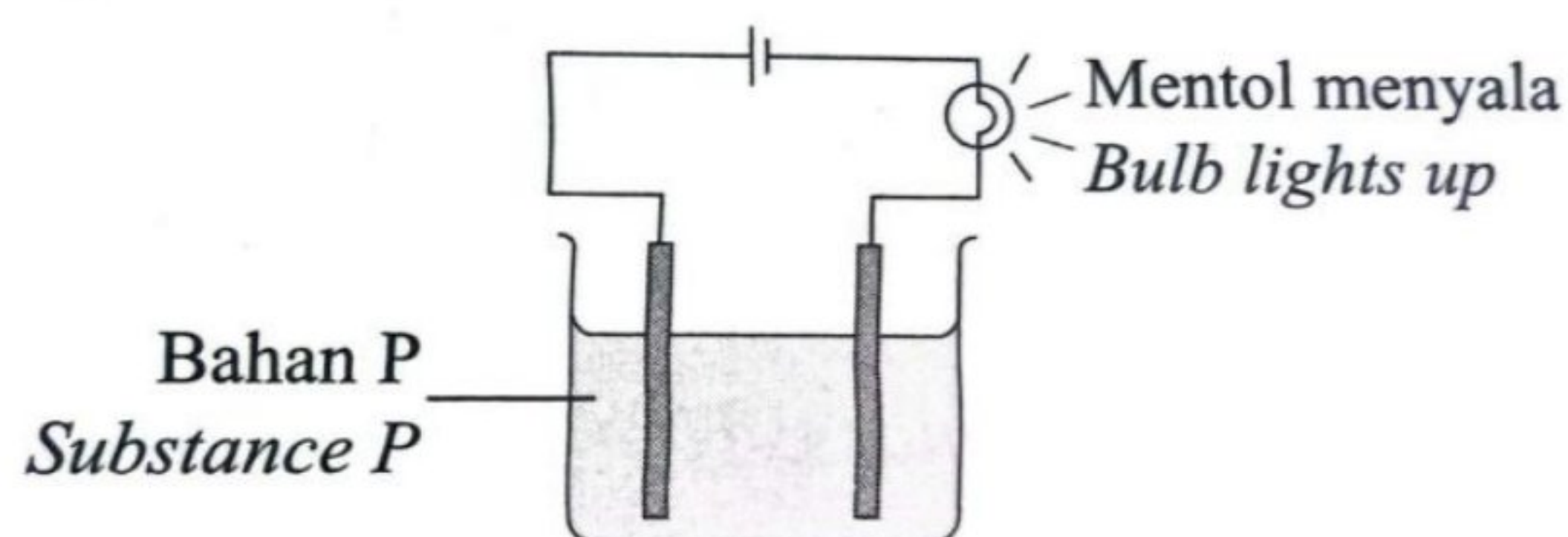
Rajah 9 / Diagram 9

Apakah kaca X?
What is glass X?

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

18. Antara yang berikut, yang manakah proses pengoksidaan?
Which of the following is an oxidation process?
- A** Karbon dioksida kehilangan oksigen
Carbon dioxide loses oxygen
 - B** Satu atom bromin menerima satu elektron
A bromine atom gains an electron
 - C** Satu molekul klorin menerima hidrogen
A chlorine molecule gains hydrogen
 - D** Satu atom natrium kehilangan satu elektron
A sodium atom loses an electron

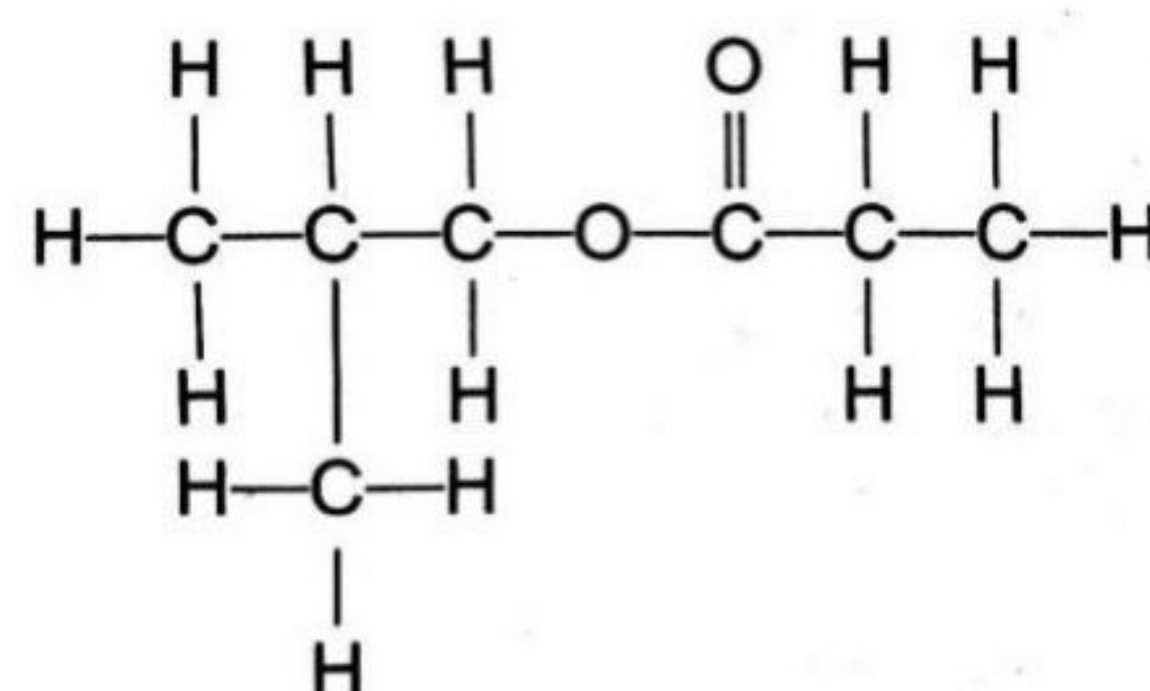
19. Rajah 10 menunjukkan sel elektrolisis.
Diagram 10 shows an electrolytic cell.



Rajah 10 / Diagram 10

Antara berikut, yang manakah bahan X?
Which of the following is substance P?

- A Etil etanoat
Ethyl ethanoate
 - B Klorometana
Chloromethane
 - C Larutan glukosa
Glucose solution
 - D Larutan natrium klorida
Sodium chloride solution
20. Rajah 11 menunjukkan formula struktur bagi sebatian hidrokarbon P.
Diagram 11 shows the structural formula of hydrocarbon compound P.



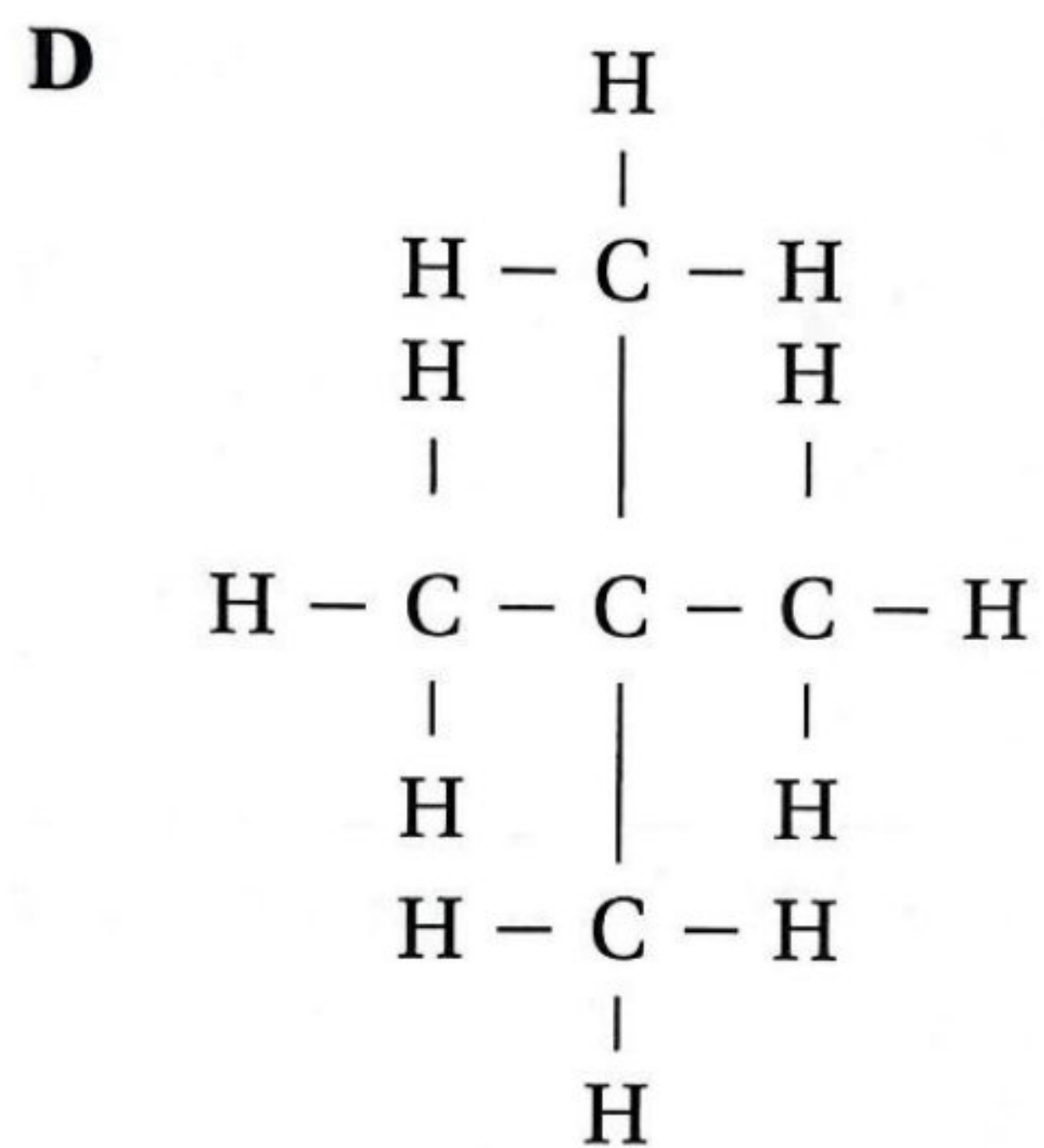
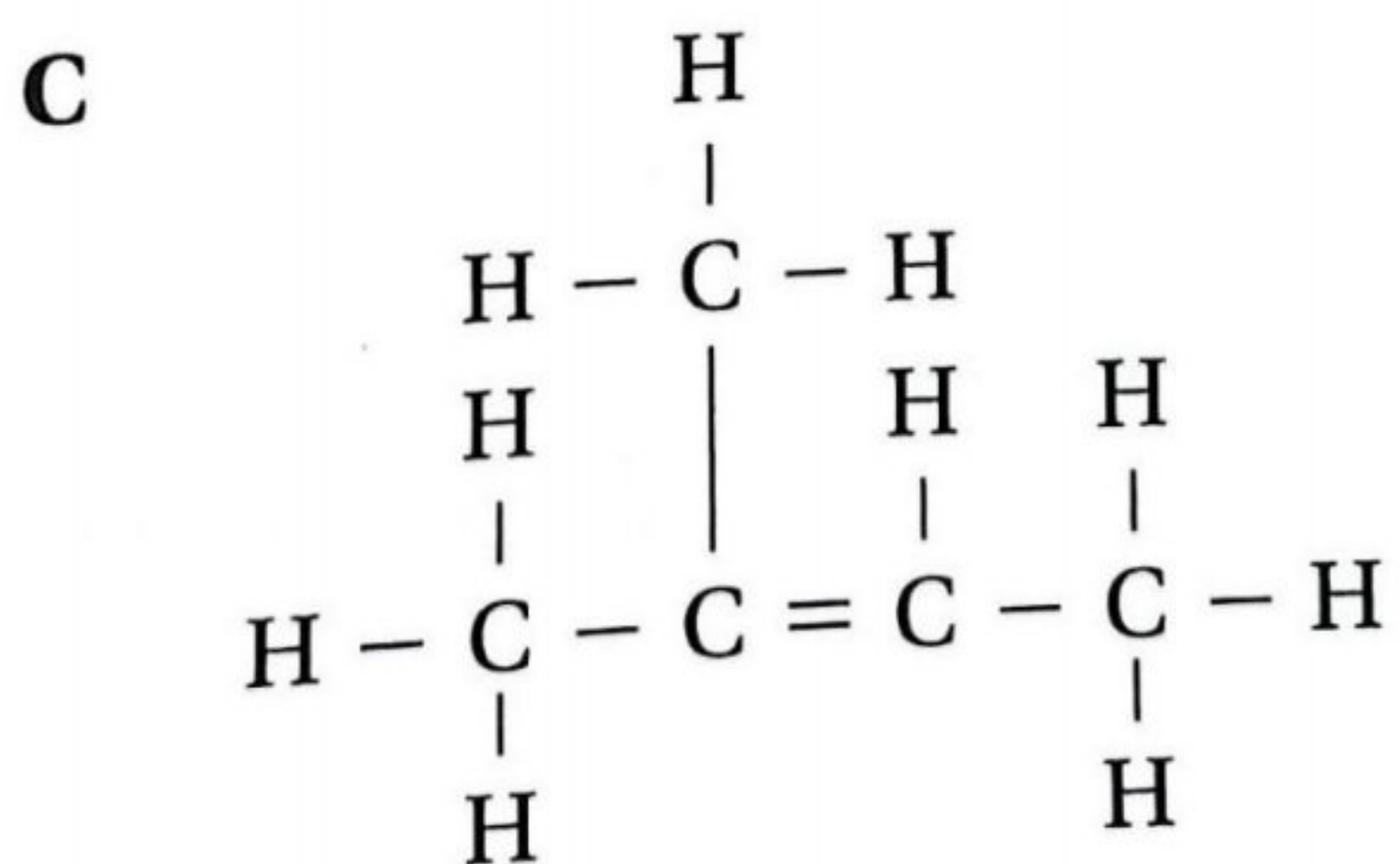
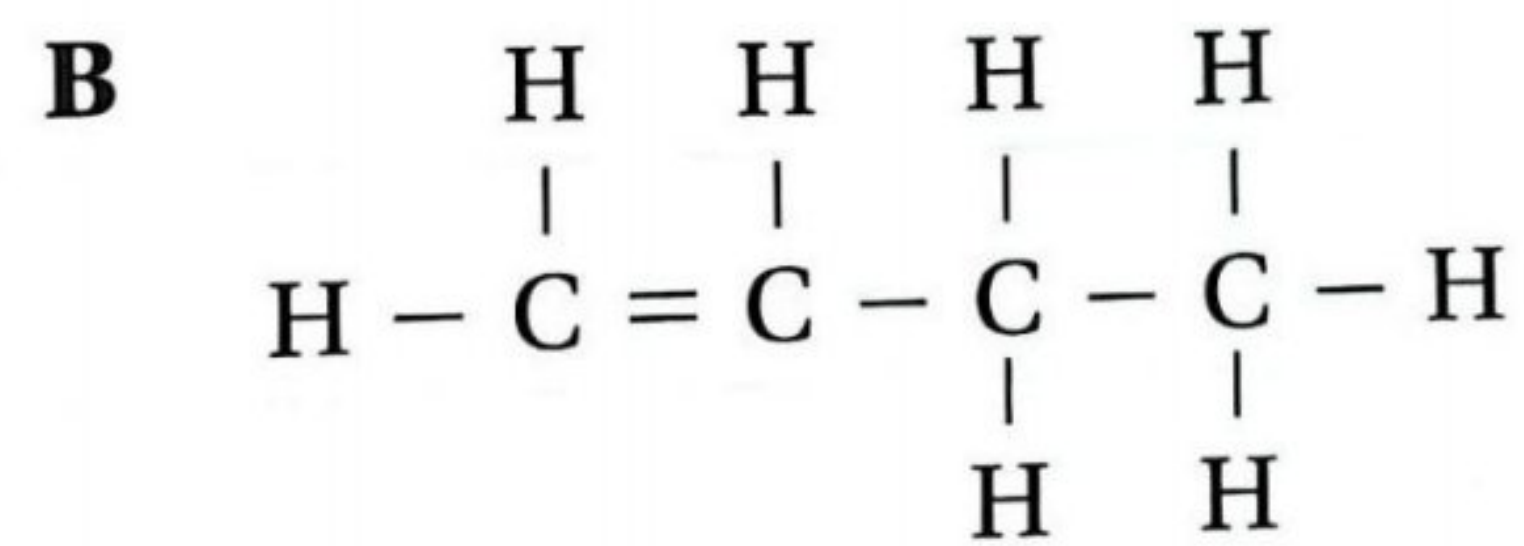
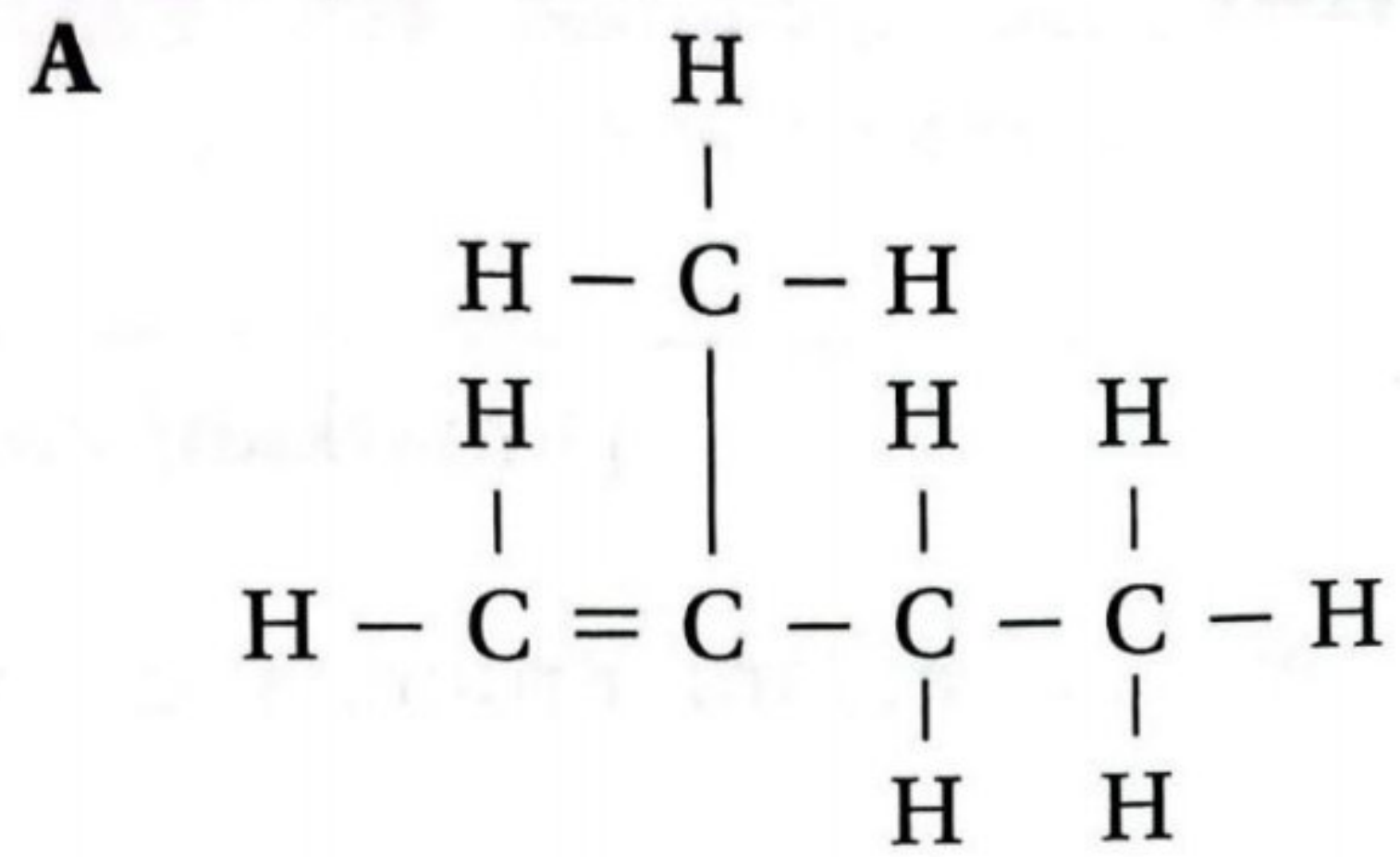
Rajah 11 / Diagram 11

Antara yang berikut, pasangan asid dan alkohol manakah yang akan menghasilkan sebatian P melalui refluks?
Which of the following pairs of acid and alcohol will produce substance P through reflux?

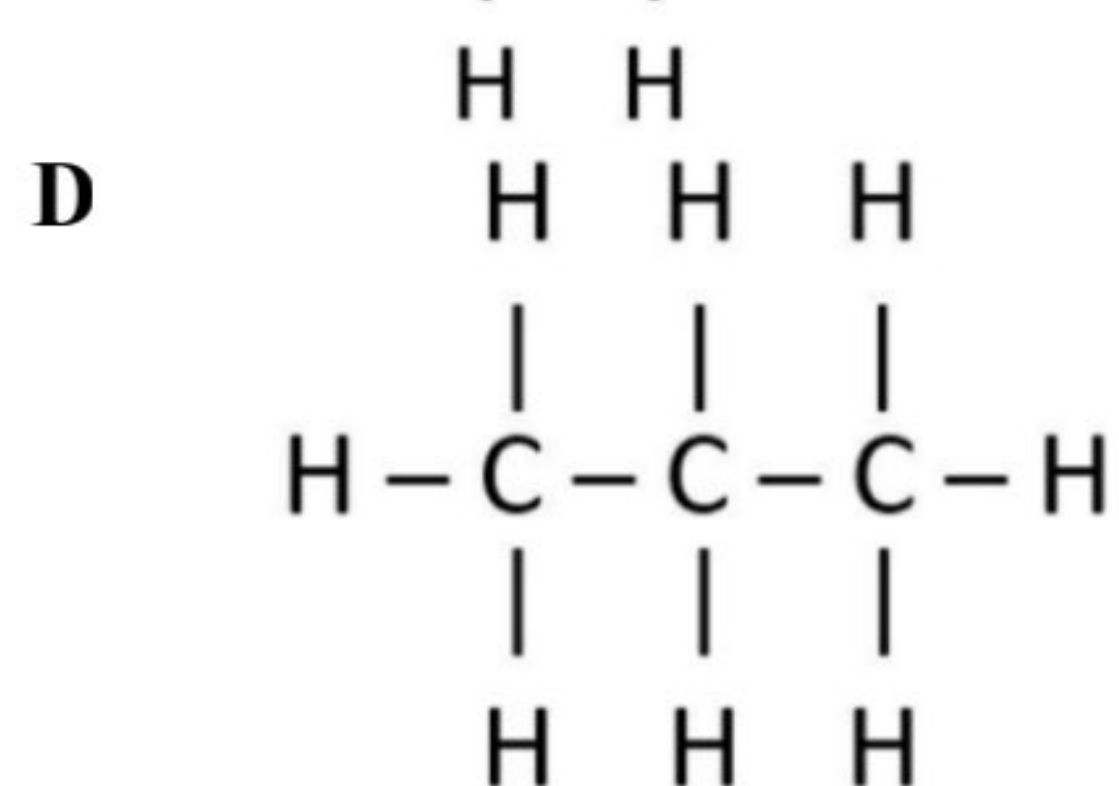
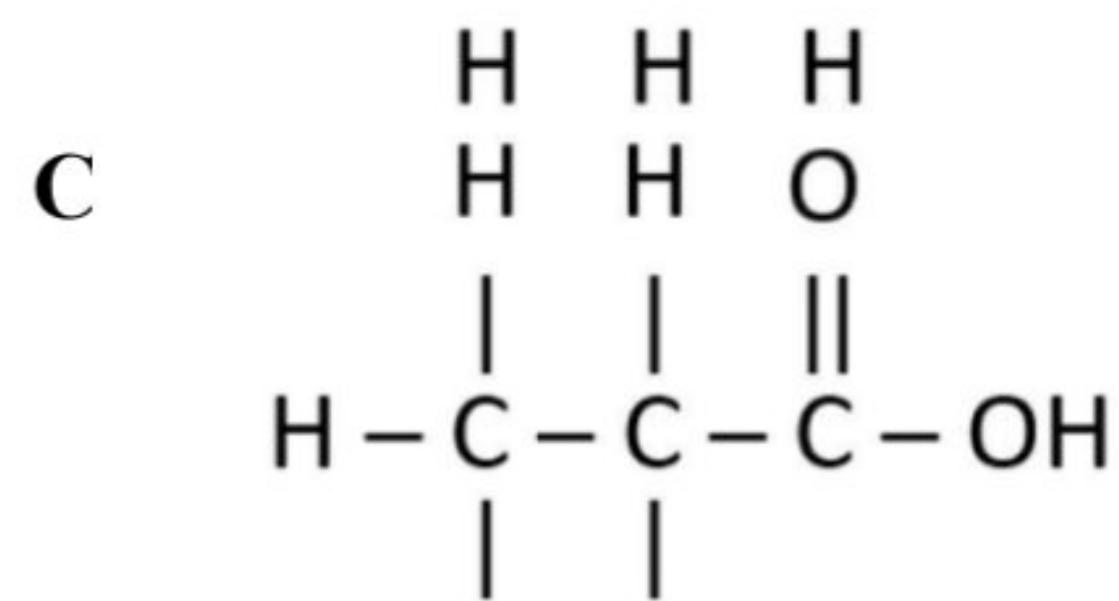
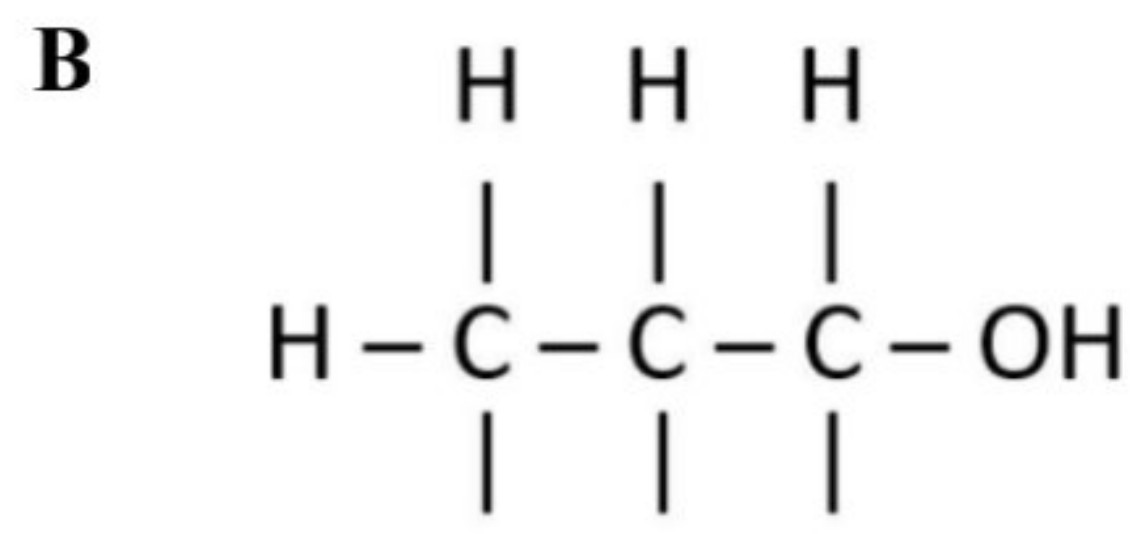
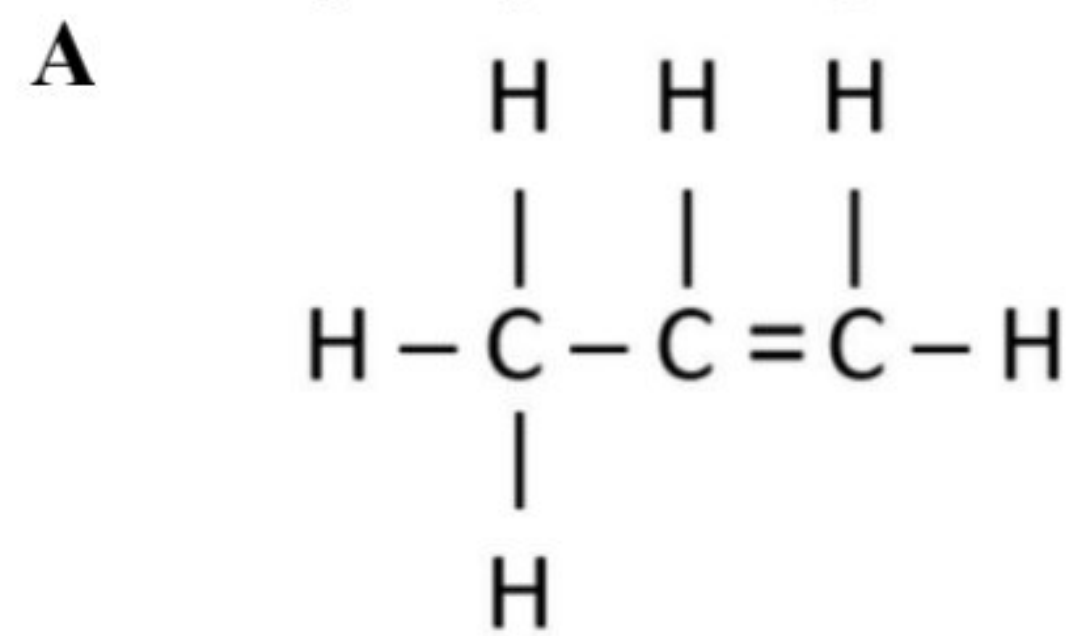
Which of the following pairs of acid and alcohol will produce substance P through reflux?

	Asid <i>Acid</i>	Alkohol <i>Alcohol</i>
A	Asid propanoik <i>Propanoic acid</i>	Butan-1-ol <i>Butan-1-ol</i>
B	Asid propanoik <i>Propanoic acid</i>	2-metilpropan-1-ol <i>2-methylpropan-1-ol</i>
C	Asid propanoik <i>Propanoic acid</i>	Propan-1-ol <i>Propan-1-ol</i>
D	Asid etanoik <i>Ethanoic acid</i>	Butan-1-ol <i>Butan-1-ol</i>

21. Antara berikut, yang manakah formula struktur bagi 2-metilbut-2-ena?
Which of the following is the structural formula of 2-methylbut-2-ene?



22. Antara formula struktur berikut, yang manakah merupakan hidrokarbon tepu?
Which of the following structural formula is a saturated hydrocarbon?



23. Apakah nama proses bagi penyediaan etil etanoat?
What is the name of process of preparation of ethyl ethanoate?

- A Penapaian
Fermentation
- B Pengoksidaan
Oxidation
- C Pengesteran
Esterification
- D Pendehidratan
Dehydration

24. Petroleum terdiri daripada hidrokarbon. Bagaimanakah hidrokarbon ini ditapiskan?
Petroleum consists of hydrocarbons. How are these hydrocarbons refined?

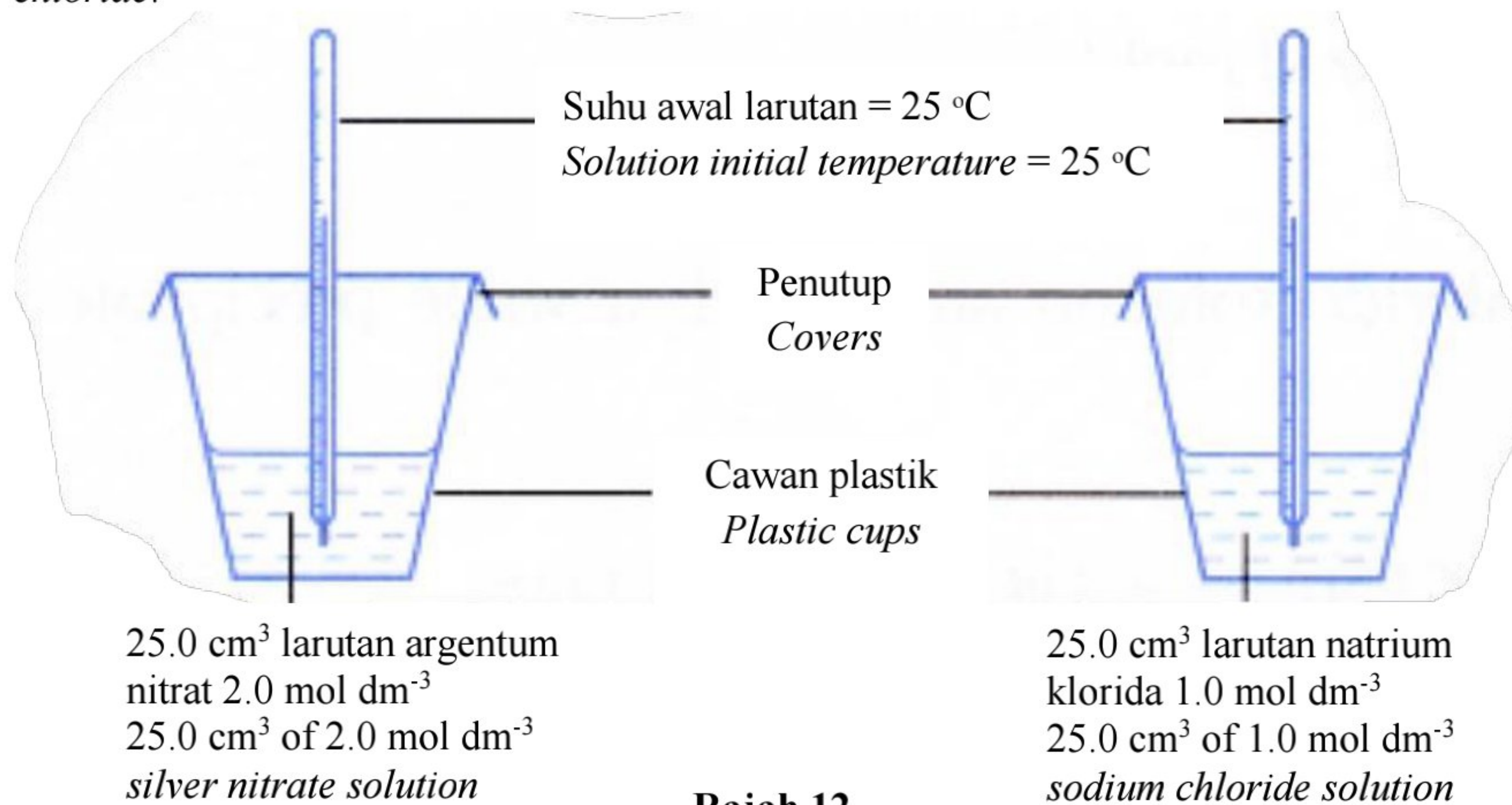
- A Melalui proses peleburan dan kondensasi.
Through melting and condensation processes.
- B Melalui proses pendidihan dan penyulingan.
Through boiling and distillation processes.
- C Melalui proses penyulingan berperingkat dan peretakan.
Through fractional distillation and cracking processes.
- D Melalui proses pempolimeran.
Through polymerisation processes.

25. Antara berikut, yang manakah andaian yang dibuat dalam penghitungan haba tindak balas?
Which of the following are the assumptions made in the calculation of heat of reaction?

- I.** Sebahagian kecil haba diserap oleh radas.
Small amount of heat energy is absorbed by the apparatus
- II.** Ketumpatan larutan akueus ialah 1 g cm^{-3}
Density of the aqueous solution is 1 g cm^{-3}
- III.** Sebahagian tenaga haba dibebaskan ke persekitaran
Some of the heat energy is lost to the surrounding
- IV.** Muatan haba tentu larutan adalah sama dengan muatan haba tentu air.
Specific heat capacity of the solution is the same as specific heat capacity of water.

- A** I dan II
I and II
- B** I dan III
I and III
- C** II dan IV
II and IV
- D** III dan IV
III and IV

26. Rajah 12 menunjukkan susunan radas untuk mengkaji haba pemendakan argentum klorida. *Diagram 12 shows the apparatus set-up to investigate the heat of precipitation of silver chloride.*



Rajah 12
Diagram 12

Apakah suhu akhir campuran sekiranya haba pemendakan argentum klorida ialah 65.5 kJ mol⁻¹?

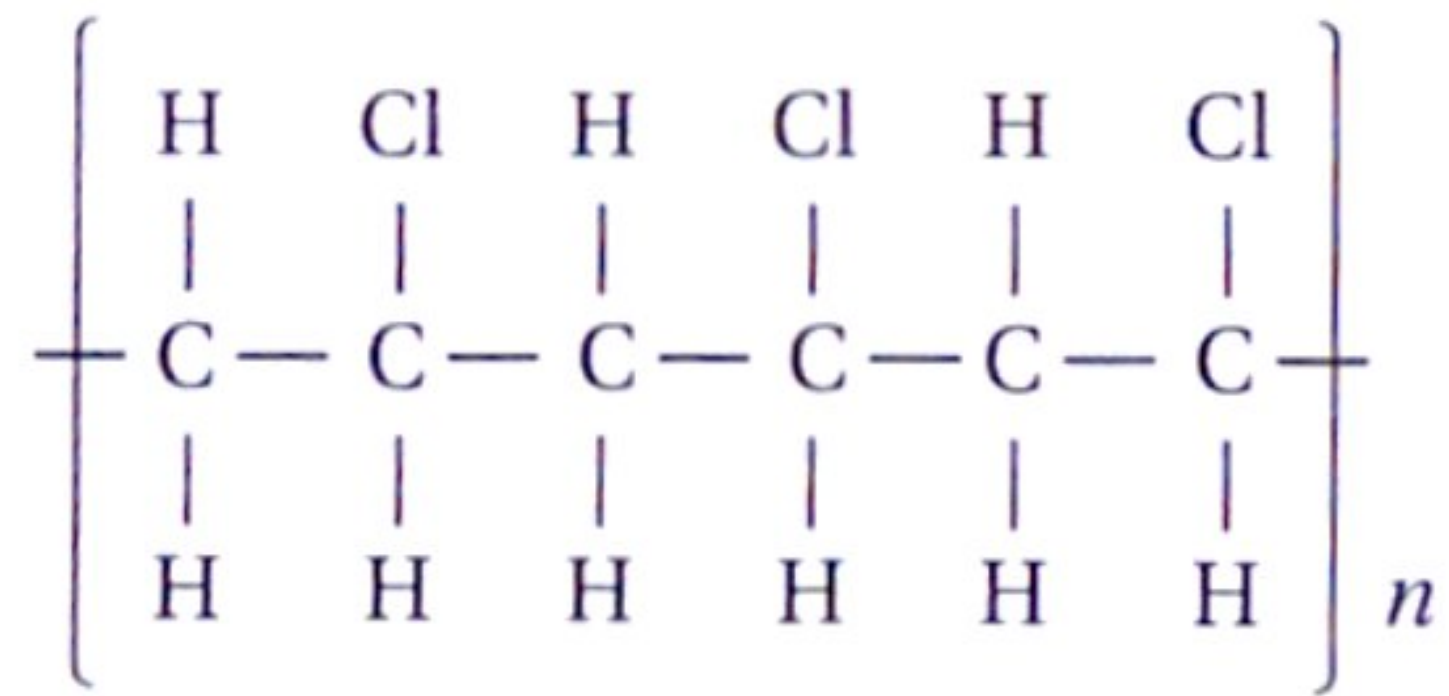
[Muatan haba tentu larutan = 4.2 J g⁻¹ °C⁻¹, ketumpatan larutan = 1.0 g cm⁻³]

What is the final temperature of the mixture if the heat of precipitation of silver chloride is 65.5 kJ mol⁻¹?

[Specific heat capacity of solution = 4.2 J g⁻¹ °C⁻¹, density of solution = 1.0 g cm⁻³]

- A 7.8 °C
- B 15.6 °C
- C 32.8 °C
- D 40.6 °C

27. Rajah 13 menunjukkan formula struktur suatu polimer.
Diagram 13 shows the structural formula of a polymer.



Rajah 13
Diagram 13

Antara yang berikut, yang manakah monomer bagi polimer tersebut?
Which of the following is the monomer of the polymer?

- A**
- $$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{Cl}-\text{C}-\text{C}-\text{H} \\ | \quad | \\ \text{H} \quad \text{H} \end{array}$$
- B**
- $$\begin{array}{c} \text{H} \quad \text{H} \\ | \quad | \\ \text{H}-\text{C}=\text{C}-\text{Cl} \end{array}$$
- C**
- $$\begin{array}{c} \text{Cl} \quad \text{Cl} \\ | \quad | \\ \text{H}-\text{C}=\text{C}-\text{H} \end{array}$$
- D**
- $$\begin{array}{c} \text{Cl} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \\ \text{H}-\text{C}=\text{C}-\text{C}-\text{H} \\ | \\ \text{H} \end{array}$$

28. Seorang penoreh getah ingin mencegah penggumpalan lateks. Apakah bahan yang boleh ditambahkan ke dalam lateks?

A rubber tapper want to prevent the latex from coagulating. Which substance can be added to latex?

- A** Larutan natrium hidroksida
Sodium hydroxide solution
- B** Larutan natrium klorida
Sodium chloride solution
- C** Ammonia akueus
Aqueous ammonia
- D** Asid metanoik
Methanoic acid

29. Rajah 14 menunjukkan ubat analgesik aspirin.
Diagram 29 shows the analgesic medicine aspirin.



Rajah 14
Diagram 14

Antara pernyataan berikut, yang manakah betul tentang aspirin?
Which of the following statements is correct about aspirin?

- A** Aspirin ialah sumber vitamin A.
Aspirin is a source of vitamin A.
- B** Aspirin boleh diambil pada bila-bila masa.
Aspirin can be taken anytime.
- C** Aspirin juga bertindak sebagai antibiotik.
Aspirin also acts as an antibiotic.
- D** Aspirin adalah tidak sesuai untuk pesakit gastrik.
Aspirin is not suitable for gastric patients.

30. Merkuri dalam dalam krim kulit merencatkan pembentukan melanin, seterusnya menjadikan kulit lebih cerah. Walau bagaimanapun, jumlah merkuri berbahaya yang ditambah ke dalam produk kosmetik akan memberi kesan sampingan kepada pengguna. Apakah kesan tersebut?

Mercury in skin creams inhibits the formation of melanin, thus makes skin lighter. However, dangerous levels of mercury added into cosmetic product will give side effects to the user. What are the effects?

- I. Cirit birit
Diarrhoea
 - II. Toksik kepada peparu dan ginjal
Toxic to lungs and kidneys
 - III. Selesema
Runny nose
 - IV. Keradangan kulit
Skin irritation
-
- A I dan II
I and II
 - B I dan III
I and III
 - C II dan IV
II and IV
 - D III dan IV
III and IV

31. Ammonium sulfat, $(\text{NH}_4)_2\text{SO}_4$ digunakan sebagai baja untuk tanaman. Berapakah peratus jisim nitrogen dalam ammonium sulfat?
[Jisim atom relatif: H = 1; N = 14; O = 16; S = 32]
Ammonium sulphate, $(\text{NH}_4)_2\text{SO}_4$ is used as a fertiliser for plants. What is the percentage by mass of nitrogen in ammonium sulphate?
[Relative atomic mass: H = 1; N = 14; O = 16; S = 32]

- | | | | |
|---|-------|---|-------|
| A | 10.6% | C | 13.3% |
| B | 12.3% | D | 21.2% |

34. Jadual 3 menunjukkan maklumat berkenaan tiga sel voltan.

Table 3 shows information about three voltaic cells.

Pasangan logam <i>Pairs of metal</i>	Beza keupayaan (V) <i>Potential difference (V)</i>	Terminal negatif <i>Negative terminal</i>
R dan kuprum <i>R and copper</i>	0.44	R
S dan kuprum <i>S and copper</i>	1.70	S
T dan kuprum <i>T and copper</i>	0.53	Cu

Jadual 3 / Table 3

Apakah beza keupayaan bagi pasangan logam S dan T?

What is the potential difference for the pair of metal S and T?

A 2.23 V

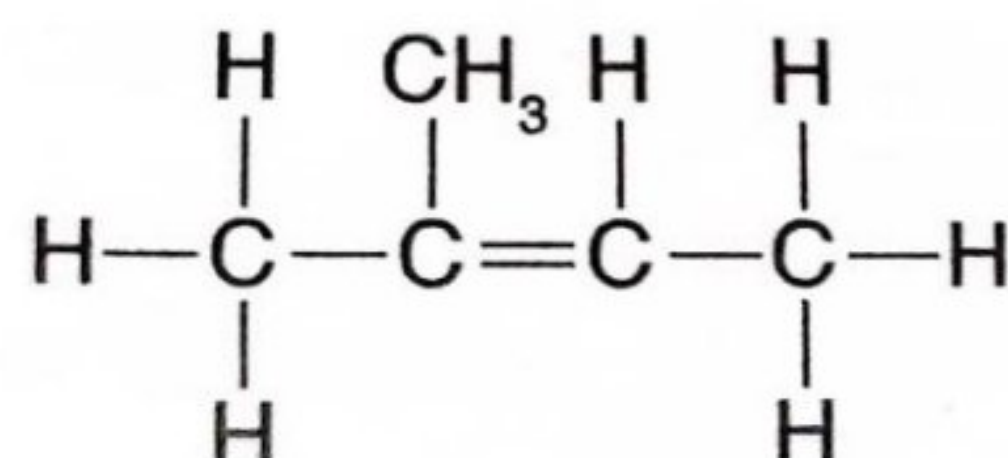
C 0.97 V

B 1.17 V

D 2.67 V

35. Rajah 16 menunjukkan formula struktur bagi satu sebatian organik.

The diagram 16 shows the structural formula of an organic compound.



Rajah 16 / Diagram 16

Apakah nama IUPAC bagi sebatian ini?

What is the IUPAC name of this compound?

A 2-pentena

C 2-metilbut-2-ena

2-pentene

2-methylbut-2-ene

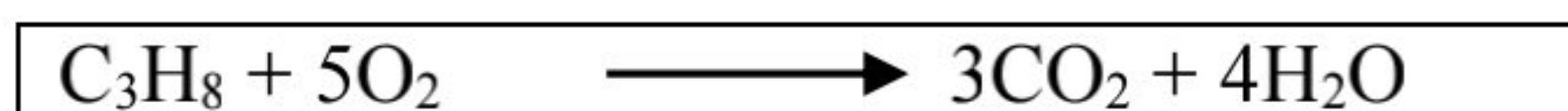
B 2-metilbut-1-ena

D 3-metilbut-3-ena

2-methylbut-1-ene

3-methylbut-3-ene

38. Persamaan kimia berikut mewakili pembakaran gas propana.
The following chemical equation represent the combustion of propane gas.



Hitung isi padu gas oksigen yang diperlukan untuk bertindak balas lengkap dengan 22 g gas propana pada keadaan bilik.

[Isi padu molar gas = $24 \text{ dm}^3 \text{ mol}^{-1}$ pada keadaan bilik; Jisim atom relatif: C = 12, H = 1, O = 16]

Calculate the volume of oxygen gas needed to react completely with 22 g of propane gas at room condition.

[Molar volume of gas = $24 \text{ dm}^3 \text{ mol}^{-1}$ at room condition; Relative atomic mass: C = 12, H = 1, O = 16]

- | | | | |
|---|-------------------|---|-------------------|
| A | 30 dm^3 | C | 80 dm^3 |
| B | 60 dm^3 | D | 90 dm^3 |

39. 50 cm^3 larutan kalium klorida 1.0 mol dm^{-3} dicampurkan ke dalam cawan polistirena yang mengandungi 50 cm^3 larutan argentum nitrat 1.0 mol dm^{-3} . Haba pemendakan bagi tindak balas tersebut ialah -51 kJ mol^{-1} . Apakah suhu maksimum bagi campuran itu jika purata suhu awal larutan tersebut ialah 29.0°C ?

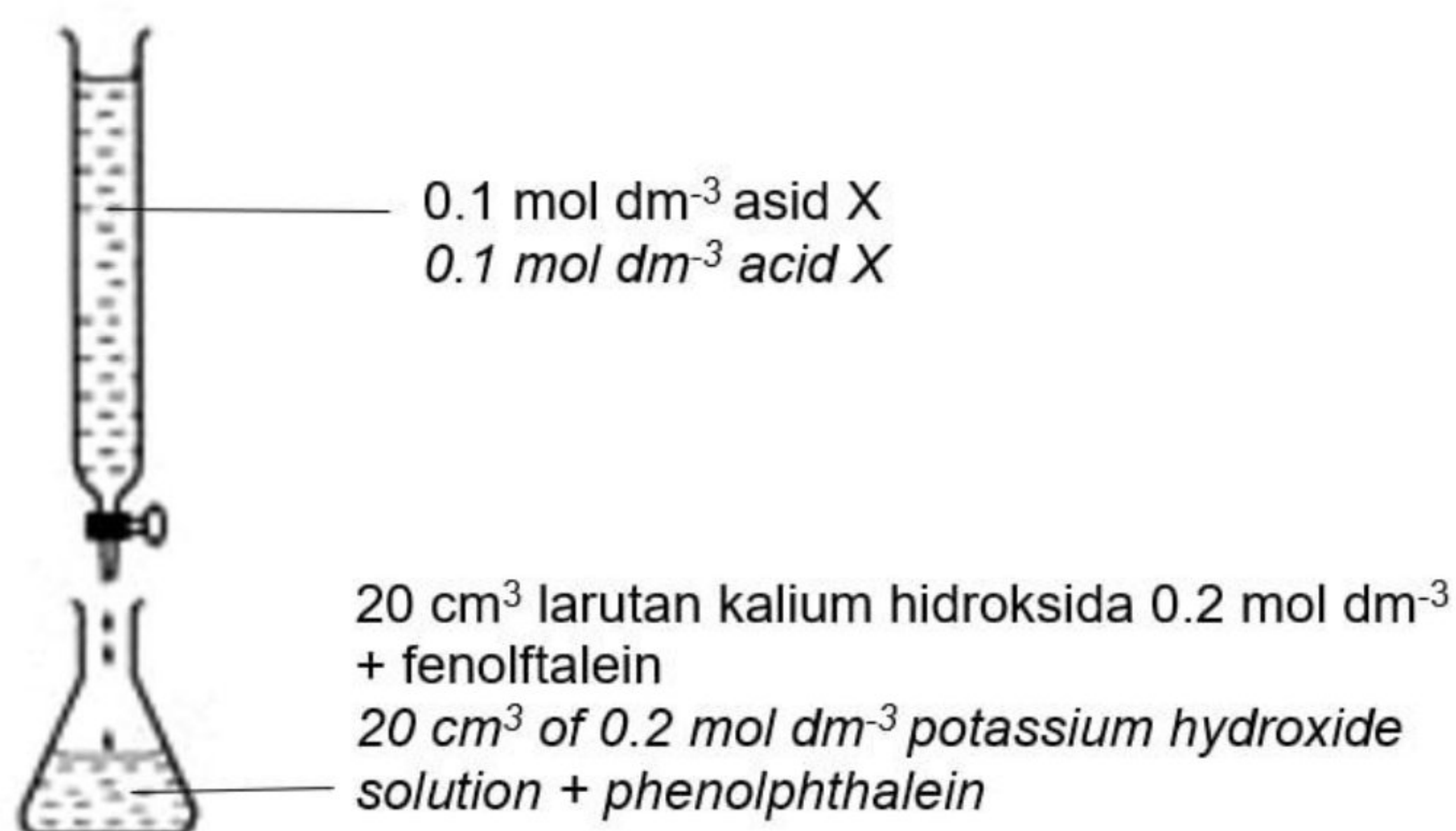
[Muatan haba tentu larutan = $4.2 \text{ J g}^{-1}\text{ }^\circ\text{C}$]

50 cm^3 of 1.0 mol dm^{-3} potassium chloride solution is mixed into a polystyrene cup which containing 50 cm^3 of 1.0 mol dm^{-3} silver nitrate solution. The heat of precipitation for the reaction is -51 kJ mol^{-1} . What is the maximum temperature of the mixture if the average of initial temperature of the solution is 29.0°C ?

[Specific heat capacity of solutions = $4.2 \text{ J g}^{-1}\text{ }^\circ\text{C}$]

- | | | | |
|---|-------------------------------|---|-------------------------------|
| A | $6.0 \text{ }^\circ\text{C}$ | C | $35.0 \text{ }^\circ\text{C}$ |
| B | $12.1 \text{ }^\circ\text{C}$ | D | $41.1 \text{ }^\circ\text{C}$ |

40. Rajah 17 menunjukkan susunan radas bagi satu eksperimen.
Diagram 17 shows apparatus set-up of an experiment.



Rajah 17
Diagram 17

Jadual 4 menunjukkan keputusan eksperimen.
Table 4 shows the results of the experiment.

Bacaan awal asid X (cm ³) <i>The initial reading of X acid (cm³)</i>	0.00	2.00	3.00	4.00	5.00
Bacaan akhir asid X (cm ³) <i>The final reading of X acid (cm³)</i>	38.00	41.00	43.00	45.00	47.00
Perubahan warna larutan natrium hidroksida <i>Colour changes of sodium hydroxide solution</i>	Merah jambu <i>Pink</i>	Merah jambu <i>Pink</i>	Tidak berwarna <i>Colourless</i>	Tidak berwarna <i>Colourless</i>	Tidak berwarna <i>Colourless</i>

Jadual 4 / Table 4

Antara yang berikut, yang manakah mewakili asid X?
Which of the following represents X acid?

- | | | | |
|---|---|---|--|
| A | Asid etanoik
<i>Ethanoic acid</i> | C | Asid sulfurik
<i>Sulphuric acid</i> |
| B | Asid fosforik
<i>Phosphoric acid</i> | D | Asid hidroklorik
<i>Hydrochloric acid</i> |

*****Kertas Soalan Tamat*****
 *****End of Question Paper*****