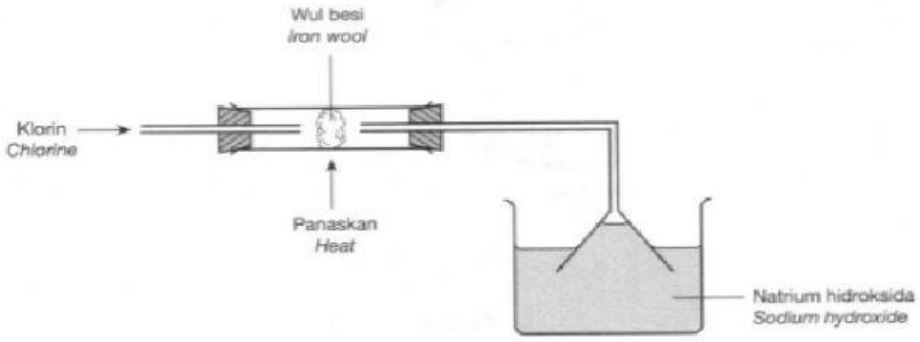
6 Rajah 6 menunjukkan susunan radas bagi mengkaji tindak balas klorin dengan ferum.
Diagram 6 shows the set-up of the apparatus for studying the reaction between chlorine and iron.



Rajah 6 ***Diagram 6***

(a) Nyatakan pemerhatian bagi tindak balas ini.
State the observation for this reaction.

_____

_____

[2 markah/*marks*]

(b) Berdasarkan Rajah 6,
Based on Diagram 6,

(i) namakan hasil tindak balas.
name the product.

_____

[1 markah/*mark*]

(ii) Nytakan perubahan nombor pengoksidaan bagi ferum.
State the change in the oxidation number of iron.

_____

[1 markah/*mark*]

(c) Apakah fungsi larutan natrium hidroksida dalam eksperimen ini?
What is the function of sodium chloride solution in this experiment?

_____

[1 markah/*mark*]

(d) Ramalkan kadar tindak balas bagi eksperimen ini jika klorin digantikan dengan bromin.
KBAT *Predict the rate of reaction of the experiment if chlorine is replaced with bromine.*

_____

[1 markah/*mark*]

(e) 0.03 mol ferum bertindak balas lengkap dengan gas klorin berlebihan.
0.03 mol of iron reacted completely with excess chlorine gas.
[Jisim atom relatif/*Relative atomic mass*: Cl = 35.5, Fe = 56]

(i) Tuliskan persamaan kimia bagi tindak balas ini.
Write a chemical equation for this reaction.

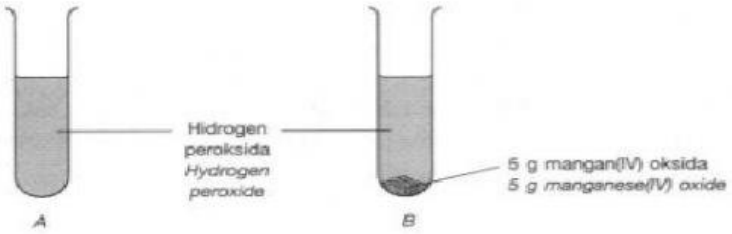
_____

[2 markah/*marks*]

(ii) Hitung jisim hasil tindak balas pepejal yang terhasil.
Calculate the mass of the solid product formed.

[2 markah/*marks*]

7 Rajah 7 menunjukkan satu eksperimen dijalankan untuk menyiasat penguraian hidrogen peroksida dengan kehadiran mangkin. 5 g mangan(IV) oksida ditambah kepada 10 cm^3 larutan hidrogen peroksida. Gas yang dibebaskan diuji dengan kayu uji berbara.
Diagram 7 shows an experiment that was conducted to investigate the decomposition of hydrogen peroxide with the presence of a catalyst. 5 g of manganese(IV) oxide is added into 10 cm^3 of hydrogen peroxide solution. The gas liberated is tested with a glowing wooden splinter.



Tabung uji *A* ***Test tube A***	10 cm^3 2-isi padu hidrogen peroksida *10 cm^3 of 2-volume hydrogen peroxide*
Tabung uji *B* ***Test tube B***	5 g mangan(IV) oksida + 10 cm^3 2-isi padu hidrogen peroksida *5 g of manganese(IV) oxide + 10 cm^3 of 2-volume hydrogen peroxide*

Rajah 7 *Diagram 7*

(a) Tuliskan persamaan untuk penguraian hidrogen peroksida.
Write an equation for the decomposition of hydrogen peroxide.

[2 markah/*marks*]

(b) Nyatakan maksud mangkin.
State the meaning of catalyst.

[1 markah/*mark*]

(c) Lengkapkan jadual berikut untuk menyatakan pemerhatian tindak balas tersebut.
Complete the following table to state the observation of the reaction.

Tabung uji ***Test tube***	**Pemerhatian** ***Observation***
A	
B	

[2 markah/marks]

(d) Terangkan bagaimana mangkin mempengaruhi kadar penguraian hidrogen peroksida.
Explain how a catalyst affects the rate of decomposition of hydrogen peroxide.

[2 markah/*marks*]

(e) Cadangkan **satu** kaedah lain yang boleh digunakan untuk meningkatkan kadar penguraian hidrogen peroksida.
KBAT
*Suggest **one** other method which can be used to increase the rate of decomposition of hydrogen peroxide.*

_____

_____

[1 markah/*mark*]

(f) Selepas eksperimen tamat, kandungan tabung uji *B* dituras dan jisim baki turasan ditimbang.
After the experiment has ended, the contents of test tube B is filtered and the mass of the residue is weighed.

(i) Nyatakan pemerhatian yang dapat dilihat.
State the observation.

_____

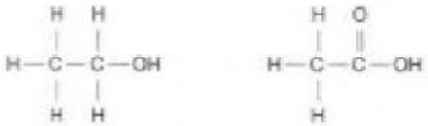
[1 markah/*mark*]

(ii) Beri **satu** sebab bagi (f)(i).
KBAT *Give **a** reason for (f)(i).*

_____

[1 markah/*mark*]

8 Rajah 8 menunjukkan formula struktur bagi sebatian *X* dan *Y* yang masing-masing mengandungi dua atom karbon.
Diagram 8 shows the structural formulae of compounds X and Y that contain two carbon atoms respectively.



Sebatian *X* / *Compound X* — Sebatian *Y* / *Compound Y*

Rajah 8 ***Diagram 8***

(a) (i) Nyatakan siri homolog bagi sebatian *X*.
State the homologous series for compound X.

_____

[1 markah/*mark*]

(ii) Tuliskan formula molekul bagi sebatian *X*.
Write the molecular formula of compound X.

_____

[1 markah/*mark*]

(b) Pada Rajah 8, bulatkan kumpulan berfungsi bagi sebatian *Y*.
In Diagram 8, circle the functional group of compound Y.

[1 markah/*mark*]

(c) Huraikan **satu** ujian kimia untuk membezakan antara sebatian *X* dengan sebatian *Y*.
*Describe **a** chemical test to differentiate between compounds X and Y.*

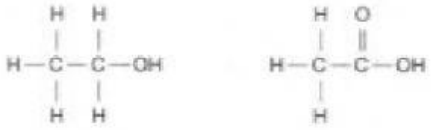
_____

_____

_____

[2 markah/*marks*]

8 Rajah 8 menunjukkan formula struktur bagi sebatian *X* dan *Y* yang masing-masing mengandungi dua atom karbon.
Diagram 8 shows the structural formulae of compounds X and Y that contain two carbon atoms respectively.



Sebatian *X* / *Compound X*

Sebatian *Y* / *Compound Y*

Rajah 8 ***Diagram 8***

(a) (i) Nyatakan siri homolog bagi sebatian *X*.
State the homologous series for compound X.

_____

[1 markah/*mark*]

(ii) Tuliskan formula molekul bagi sebatian *X*.
Write the molecular formula of compound X.

_____

[1 markah/*mark*]

(b) Pada Rajah 8, bulatkan kumpulan berfungsi bagi sebatian *Y*.
In Diagram 8, circle the functional group of compound Y.

[1 markah/*mark*]

(c) Huraikan **satu** ujian kimia untuk membezakan antara sebatian *X* dengan sebatian *Y*.
*Describe **a** chemical test to differentiate between compounds X and Y.*

_____

_____

_____

[2 markah/*marks*]

(d) (i) Jelaskan bagaimana sebatian *Y* dapat disediakan daripada sebatian *X*.
Explain how compound Y can be prepared from compound X.

_____

_____

[2 markah/*marks*]

(ii) Tulis persamaan tindak balas di (d)(i).
Write the equation for the reaction in (d)(i).

_____

[1 markah/*mark*]

(e) Satu sebatian *Z* dihasilkan apabila sebatian *X* bertindak balas dengan sebatian *Y*.
Namakan sebatian *Z*.
A compound Z is produced when compound X is reacted with compound Y.
Name compound Z.

_____

[1 markah/*mark*]