



8. Takat didih etanol adalah tinggi.
Antara yang berikut, yang manakah menerangkan ciri etanol ini?

The boiling point of ethanol is high.

Which of the following explain the characteristic of ethanol?

- A Etanol adalah pepejal pada suhu bilik
Ethanol is a solid at room temperature
- B Terdapat ikatan hidrogen di dalam struktur etanol
There are hydrogen bonds in the ethanol structure
- C Terdapat ikatan ion di dalam struktur etanol
There are ionic bonds in the ethanol structure

9. Molekul manakah mempunyai ikatan kovalen ganda dua antara atomnya?

SPM
2018

Which molecule has a double covalent bond between its atoms?

[Nombor proton: H = 1, N = 7, O = 8, Cl = 9]

[Proton number: H = 1, N = 7, O = 8, Cl = 9]

A Nitrogen

Nitrogen

B Klorin

Chlorine

C Oksigen

Oxygen

D Hidrogen

Hydrogen

10. Antara yang berikut, yang manakah mempunyai ikatan logam di dalam strukturnya?

Which of the following has metallic bonding in its structure?

A Intan

Diamond

B Magnesium

Magnesium

C Sulfur

Sulphur

D Chlorine

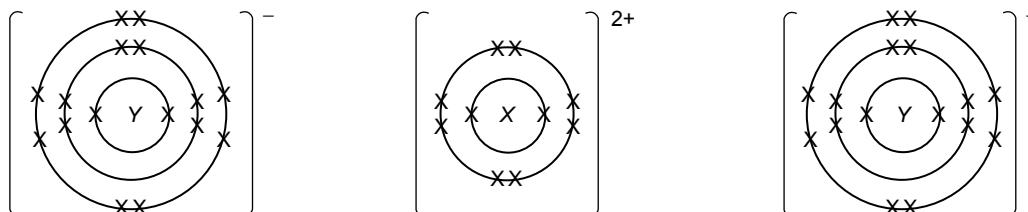
Klorin

Soalan Struktur

Bahagian A

1. Rajah 1 menunjukkan susunan elektron bagi satu sebatian terbentuk antara unsur X dan unsur Y.

Diagram 1 shows the electron arrangement of a compound formed between elements X and Y.



Rajah 1 / Diagram 1

- (a) Nyatakan jenis sebatian itu.

State the type of compound

[1 markah / mark]

- (b) Tulis formula bagi sebatian itu.

Write the formula of the compound

[1 markah / mark]

- (c) Tulis susunan elektron bagi

Write the electron arrangement for

(i) atom X: _____

(ii) atom Y: _____

[2 markah / marks]



- (d) Dua atom Y berkongsi elektron untuk membentuk satu bahan.
Two atoms Y share electrons to form a substance.
- (i) Lukiskan susunan elektron bagi bahan itu.
Draw the electron arrangement of the substance.

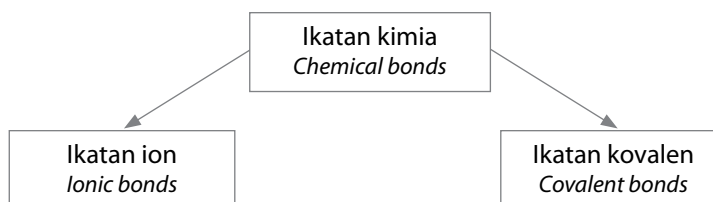
[2 markah / marks]

- (ii) Namakan jenis ikatan terbentuk dalam (d) (i).
Name the type of bond formed in (d) (i).

[1 markah / mark]

Bahagian B

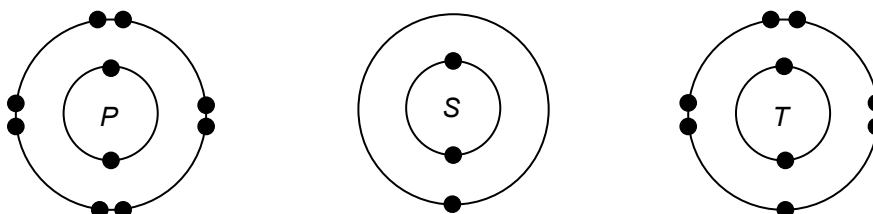
2. Terdapat dua jenis ikatan kimia.
There are two types of chemical bonds.



- (a) Nyatakan **dua** persamaan dan **dua** perbezaan antara ikatan ion dan ikatan kovalen.
State **two** similarities and **two** differences between ionic bonding and covalent bonding.

[4 markah / marks]

- (b) Rajah menunjukkan susunan elektron bagi tiga atom unsur P, S dan T.
Diagram show the electron arrangement of three atoms of elements P, S and T



- (i) Tuliskan susunan elektron bagi semua atom itu.
Write the electron arrangement for all the atoms.
- (ii) Tentukan kumpulan unsur S.
Determine the group for element S.
- (iii) Unsur yang manakah tidak aktif secara kimia? Beri **satu** sebab bagi jawapan anda.
Which element is chemically unreactive? Give **one** reason for your answer.

[6 markah / marks]

- (c) Bandingkan sifat-sifat fizik di antara sebatian ion dan sebatian kovalen.
Compare the physical properties between ionic compound and covalent compound.

Dalam jawapan anda, perlu mengandungi perkara berikut:
Your answer should consist of the following:

- Keadaan jirim pada keadaan bilik.
Physical properties in room conditions.
- Takat lebur dan takat didih.
Melting point and boiling point.
- Kekonduksian elektrik.
Electrical conductivity.
- Keterlarutan dalam air dan sebatian organik.
Solubility in water and organic solvent.
- Contoh sebatian ion dan sebatian kovalen.
Example of an ionic and covalent compound.

[10 markah / marks]

