Paper 2 Questions **Bahagian A / *Section A***

1 Rajah 1 menunjukkan perwakilan piawai bagi dua isotop atom oksigen.
Diagram 1 shows the standard representation of two isotopes of oxygen atoms.

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$^{16}_{8}O$ $^{17}_{8}O$

Rajah 1
Diagram 1

(a) Nyatakan maksud isotop.
State the meaning of isotope.

.....

[1 markah / *mark*]

(b) Berdasarkan Rajah 1;
Based on Diagram 1;

(i) Tentukan bilangan elektron dan neutron dalam jadual di bawah.
Determine the number of electrons and neutrons in the table below.

Zarah *Particle*	$^{16}_{8}O$	$^{17}_{8}O$
Bilangan elektron *Number of electron*		
Bilangan neutron *Number of neutron*		

[2 markah / *marks*]

(ii) Nyatakan elektron valens bagi unsur oksigen.
State the valence electron for oxygen element.

.....

[1 markah / *mark*]

(c) Q adalah satu bahan yang mempunyai takat lebur 80 °C dan takat didih 218 °C.
Q is a substance that has a melting point of 80 °C and a boiling point of 218 °C.

(i) Lakar graf suhu melawan masa apabila bahan Q dipanaskan daripada suhu bilik ke 90 °C.
Sketch a graph of temperature against time when substance Q is heated from room temperature to 90°C.

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(ii) Apabila bahan Q disejukkan, suhu berkurangan dan menjadi malar pada satu peringkat dan kemudian berkurang semula.
When substance Q is cooled, the temperature decreases and becomes constant at one stage and then decreases again.

Ramalkan suhu yang malar itu.
Predict the constant temperature.

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[1 markah / *mark*]

(iii) Terangkan mengapa suhu malar pada peringkat itu.
Explain why the temperature is constant at that stage.

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[2 markah / *marks*]

2 Jadual 1 menunjukkan bilangan proton dan neutron bagi atom P dan atom Q.
Table 1 shows the number of protons and neutrons for atoms P and Q.

Atom *Atom*	**Bilangan proton** *Number of protons*	**Bilangan neutron** *Number of neutrons*
P	12	12
Q	17	18

Jadual 1
Table 1

(a)(i) Apakah yang dimaksudkan dengan nombor proton?
What is meant by proton number?

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[1 markah / *mark*]

(ii) Nyatakan **dua** zarah sub atom bagi suatu atom.
*State **two** subatomic particles of an atom.*

.....

[2 markah / *marks*]

(iii) Tulis simbol bagi atom P dalam bentuk ${}^{A}_{Z}\mathbf{P}$.
Write the symbol of atom P in the form of ${}^{A}_{Z}\mathbf{P}$.

[1 markah / *mark*]

(b) Lukis susunan elektron bagi ion Q.
Draw the electron arrangement of Q ion.

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3 Jadual 2 menunjukkan formula kimia, takat lebur dan takat didih bagi karbon dioksida dan magnesium.
Table 2 shows the chemical formulae, melting points and boiling points of carbon dioxide and magnesium.

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Bahan *Substance*	Formula Kimia *Chemical Formula*	Takat lebur *Melting point* (°C)	Takat didih *Boiling point* (°C)
Karbon dioksida *Carbon dioxide*	CO_2	-56.6	-78.5
Magnesium *Magnesium*	Mg	650.0	1091.0

Jadual 2
Table 2

(a)(i) Nyatakan jenis zarah bagi karbon dioksida.
State the type of particle in carbon dioxide.

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[1 markah / *mark*]

(ii) Apakah keadaan fizik bagi magnesium pada 700 °C?
What is the physical state of magnesium at 700 °C?

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[1 markah / *mark*]

(iii) Lukiskan susunan zarah bagi magnesium di **3**(a)(ii).
Draw the arrangement of particles of magnesium in **3**(a)(ii).

[1 markah / *mark*]

(b) Solehah menyediakan dua cawan teh dengan merendam uncang teh ke dalam air suam dan air mendidih secara berasingan.
Air mendidih bertukar menjadi perang lebih cepat daripada air suam.
Solehah prepared two cups of tea by dipping tea bags in warm and boiling water respectively.
The boiling water turns brown faster than in warm water.

(i) Namakan proses yang berlaku dalam situasi di atas.
Name the process occurred in the above situation.

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[1 markah / *mark*]

(ii) Nyatakan faktor yang mempengaruhi kadar bagi proses dalam **3**(b)(i).
Terangkan jawapan anda.
State the factor that affect the rate of process in **3**(b)(i).
Explain your answer.

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