Kertas 2

[100 markah/*marks*] (2½ jam/*hours*)

Bahagian A ***Section A*** [60 markah/*marks*]

1 Jadual 1 menunjukkan nombor nukleon, nombor proton dan susunan elektron untuk lima unsur.
Table 1 shows the nucleon numbers, proton numbers and electron arrangements of five elements.

Unsur *Element*	**Nombor nukleon** *Nucleon number*	**Nombor proton** *Proton number*	**Susunan elektron** *Electron arrangement*
P	12	6	2.4
Q	13	6	
R	20	10	
S	23	11	2.8.1
T	27		2.8.3

Jadual 1 *Table 1*

(a) Apakah nombor proton atom *T*?
What is the proton number of atom T?

_____

[1 markah/*mark*]

(b) Lukiskan susunan elektron untuk unsur *Q*.
Draw the electron arrangement for element Q.

[1 markah/*mark*]

(c) Tuliskan susunan elektron atom *R*.
Write the electron arrangement of atom R.

_____

[1 markah/*mark*]

(d) (i) Apakah maksud isotop?
What is meant by isotopes?

_____

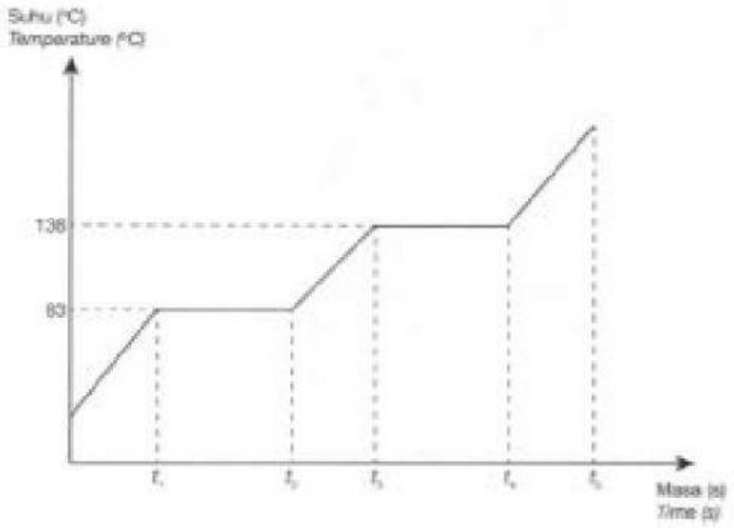
[1 markah/*mark*]

(ii) Berdasarkan Jadual 1, nyatakan pasangan unsur yang merupakan isotop.
Based on Table 1, state the pairs of elements that are isotopes.

_____

[1 markah/*mark*]

2 Rajah 1 menunjukkan graf suhu melwan masa bagi pemanasan pepejal *Q*.
Diagram 1 shows the graph of temperature against time when solid Q is heated.



Rajah 1 *Diagram 1*

Berdasarkan Rajah 1, jawab soalan berikut.
Based on Diagram 1, answer the following questions.

(a) Apakah maksud takat lebur?
What is meant by melting point?

_____

[1 markah/*mark*]

(b) Nyatakan takat lebur pepejal *Q*.
State the melting point of solid Q.

_____

[1 markah/*mark*]

(c) Nyatakan keadaan fizikal bagi *Q* dari masa t_1 hingga t_5.
State the physical state of Q from time t_1 to t_5.

_____

[1 markah/*mark*]

(d) Bandingkan tenaga kinetik zarah *Q* pada masa antara t_2 hingga t_3 dan antara t_4 hingga t_5. Terangkan jawapan anda.
Compare the kinetic energy of Q particles for the time between t_2 to t_3 and between t_4 to t_5. Explain your answer.

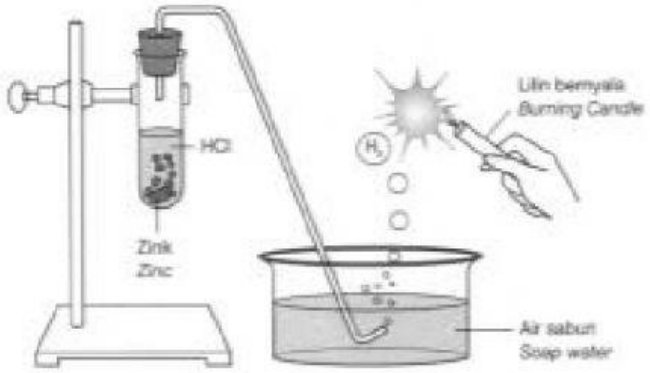
_____

_____

_____

[2 markah/*marks*]

3 Rajah 2 menunjukkan susunan radas untuk mengkaji tindak balas antara suatu asid dengan suatu logam.
Diagram 2 shows the apparatus set-up of an experiment to study the reaction between an acid and a metal.



Rajah 2 *Diagram 2*

(a) Namakan asid yang diwakili formula kimia HCl.
Name the acid that is represented by the chemical formula HCl.

_____

[1 markah/*mark*]

(b) Tulis satu persamaan kimia yang seimbang bagi mewakili tindak balas antara zink dengan asid HCl.
Write a balanced chemical equation to represent the reaction between zinc and HCl acid.

_____

[2 markah/*marks*]

(c) Nyatakan nisbah zink kepada gas hidrogen dalam tindak balas ini.
State the ratio of zinc to hydrogen gas in this reaction.

_____

[1 markah/*mark*]

(d) Jika 0.65 g zink bertindak balas lengkap dengan asid HCl, hitung isi padu gas hidrogen yang dihasilkan.
[Jisim atom relatif: Zn = 65; 1 mol gas menempati 24 dm^3 pada keadaan bilik]
If 0.65 g of zinc is reacted completely with HCl acid, calculate the amount of hydrogen gas that is produced.
[Relative atomic mass: Zn = 65; 1 mole of gas occupies the volume of 24 dm^3 at room conditions]

[2 markah/*marks*]