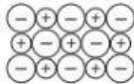


TINGKATAN 4 BAB 8: UNSUR DAN BAHAN  
FORM 4 CHAPTER 8: ELEMENTS AND SUBSTANCES

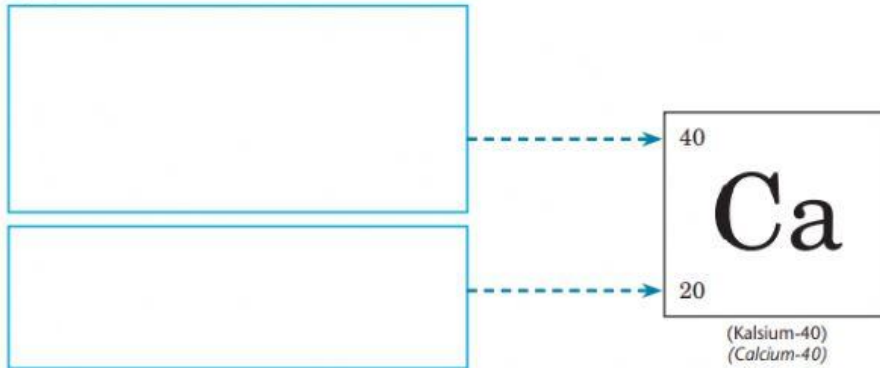
Jirim  
Matters

| Bahan/Substances                                                                               | Maksud/Meanings | Contoh/Examples |
|------------------------------------------------------------------------------------------------|-----------------|-----------------|
| (a) <br>_____ |                 |                 |
| (b) <br>_____ |                 |                 |
| (c) <br>_____ |                 |                 |

| Ciri-ciri<br>Properties                                                            | Bahan atom<br>Atomic substances | Bahan molekul<br>Molecular substances | Bahan ion<br>Ionic substances |
|------------------------------------------------------------------------------------|---------------------------------|---------------------------------------|-------------------------------|
| (a) Keadaan fizikal pada suhu bilik<br><i>Physical state at room temperature</i>   |                                 |                                       |                               |
| (b) Daya tarikan antara zarah<br><i>Forces of attraction between the particles</i> |                                 |                                       |                               |
| (c) Takat lebur dan takat didih/<br><i>Melting and boiling points</i>              |                                 |                                       |                               |
| (d) Kekonduksian elektrik<br><i>Electrical conductivity</i>                        |                                 |                                       |                               |



Isotop  
Isotope



Kegunaan Isotop  
Uses of Isotopes

## Latihan Kertas 2 Bahagian B

## Exercise Paper 2 Section B

1. Rajah 1 menunjukkan unsur W,X,Y dan Z dalam Jadual Berkala Unsur Moden.  
Diagram 1 shows some of elements W,X,Y and Z in Modern Periodic Table of Elements.

[illegible]

Rajah 1  
Diagram 1

- a) Bagaimanakah unsur disusun dalam jadual berkala Unsur Moden?  
*How the elements in the Modern Periodic Table of Elements are arranged?*

[1 markah]

- b) Berdasarkan rajah 1, nyatakan dua unsur yang berada dalam :  
Based on diagram 1, state the two elements that are in:

- (i) Kumpulan yang sama  
*The same group*

- (ii) Kala yang sama  
*The same period*

[2 markah]

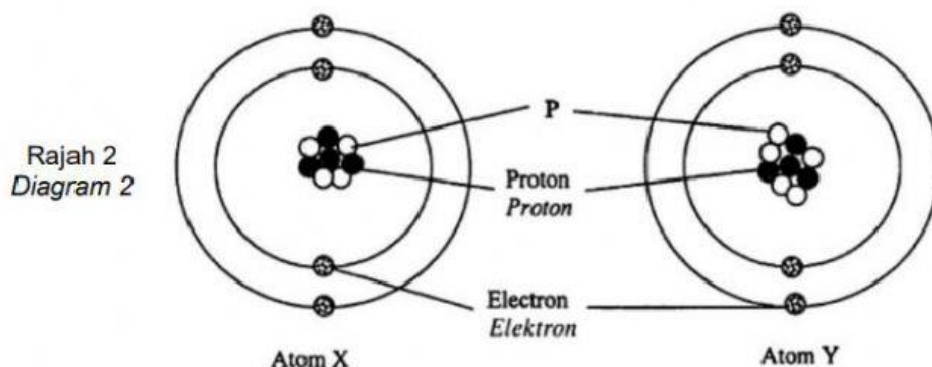
- c) W mempunyai nombor proton 11. Apakah susunan elektron atom W?  
*W has a proton number of 11. What is the electron arrangement of atom W?*

[1 markah]

- d) Lukiskan bagaimana atom W membentuk susunan elektron yang stabil?  
*Draw how the W atom forms a stable arrangement of electrons?*

[2 markah]

2. Rajah 2 menunjukkan model struktur atom X dan atom Y  
*Diagram 2 shows the structural model of the X atom and the Y atom.*



- a) Namakan zarah P  
*Name the particle P*

[1 markah]

- (b) Atom X dan Y merupakan isotop. Kenalpasti mengapakah atom X dan Y adalah isotop.  
*Atoms X and Y are isotopes. Identify why atoms X and Y are isotopes.*

[1 markah]

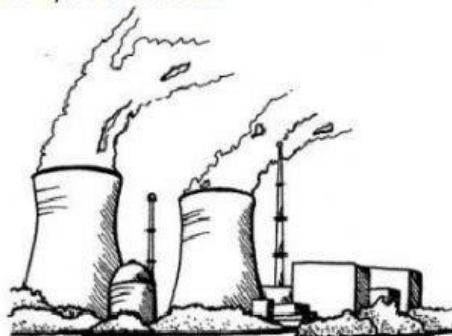
- c) Bandingkan jumlah nukleon bagi atom X dan atom Y.  
*Compare the nucleon number of atom X and atom Y*

[1 markah]



- d) Rajah 3 menunjukkan sebuah stesen janakuasa nuklear  
*Diagram 3 shows a nuclear power station.*

Rajah 3  
*Diagram 3*



- (i) Namakan bahan radioaktif yang digunakan dalam stesen janakuasa tersebut  
*Name the radioactive substance used in the power station.*

.....  
[1 markah]

- (ii) Pada pendapat anda, adakah sesuai sebuah stesen janakuasa nuklear dibina di Malaysia? Beri satu sebab kepada jawapan anda  
*In your opinion, is it suitable to build a nuclear power station in Malaysia? Give one reason for your answer.*

.....  
[2 markah]

Latihan Kertas 2 Bahagian C  
*Exercise Paper 2 Section C*

- a) Berikan definisi isotop  
*Give definition of isotope*

[2 markah]

- b) Berikan **dua** contoh isotop dan kegunaannya dalam bidang perubatan.  
*State two examples of isotopes and their uses in the medical field.*

[4 markah]

TINGKATAN 4 BAB 9: KIMIA INDUSTRI  
FORM 4 CHAPTER 9: CHEMICALS IN INDUSTRY

Aloi  
Alloy

| Aloi/Alloy          | Atom logam tulen/Atoms of the pure metal | Atom asing/Foreign atoms |
|---------------------|------------------------------------------|--------------------------|
| Keluli/Steel        |                                          |                          |
| Piuter/Pewter       |                                          |                          |
| Loyang/Brass        |                                          |                          |
| Gangsa/Bronze       |                                          |                          |
| Duralumin/Duralumin |                                          |                          |

Kegunaan Aloi  
Uses of Alloy

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(a)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>           Bingkai gambar<br/>Photo frame         </div> <div style="text-align: center;"> <br/>           Piala<br/>Trophy         </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>                                              | <p>(b)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>           Jambatan<br/>Bridge         </div> <div style="text-align: center;"> <br/>           Badan kereta<br/>Body of a car         </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div> |
| <p>(c)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>           Alat muzik<br/>Musical instrument         </div> <div style="text-align: center;"> <br/>           Kunci<br/>Key         </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>                                            | <p>(d)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>           Patung<br/>Statue         </div> <div style="text-align: center;"> <br/>           Pingat<br/>Medal         </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div>               |
| <p>(e)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <br/>           Badan kapal terbang<br/>Body of an aeroplane         </div> <div style="text-align: center;"> <br/>           Badan basikal lumba<br/>Body of a racing bike         </div> </div> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 10px;"></div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

Proses Pengaloiian  
Alloying Process

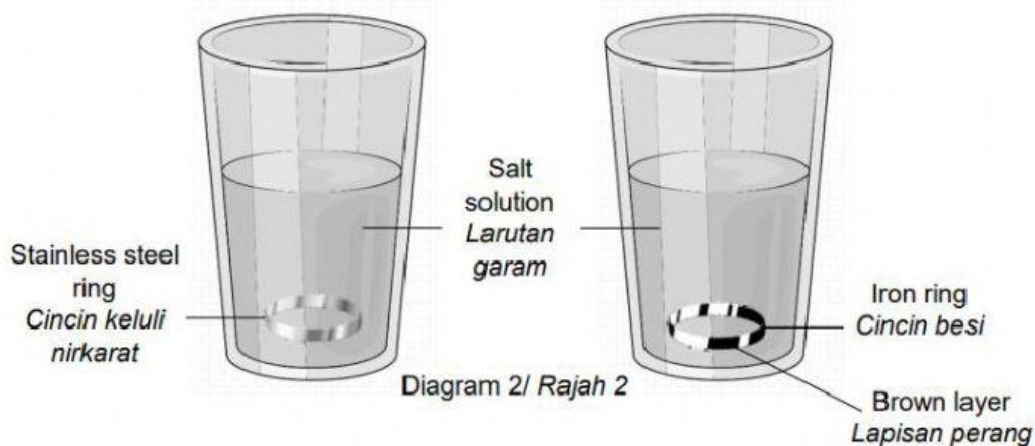
Kelebihan Alooi  
Advantages of Alloy

| Ciri-ciri<br><i>Characteristics</i>                           | Perbezaan/Differences           |                      |
|---------------------------------------------------------------|---------------------------------|----------------------|
|                                                               | Logam tulen/ <i>Pure metals</i> | Alooi/ <i>Alloys</i> |
| (a) Sifat permukaan<br><i>Surface appearance</i>              |                                 |                      |
| (b) Kekuatan<br><i>Strength</i>                               |                                 |                      |
| (c) Kekerasan<br><i>Hardness</i>                              |                                 |                      |
| (d) Kebolehan untuk dibengkokkan<br><i>Ability to be bent</i> |                                 |                      |
| (e) Takat lebur<br><i>Melting point</i>                       |                                 |                      |
| (f) Tahan kakisan<br><i>Resistance to corrosion</i>           |                                 |                      |
| (g) Kemuluran<br><i>Ductility</i>                             |                                 |                      |
| (h) Ketertempaan<br><i>Malleability</i>                       |                                 |                      |
| (i) Kekuatan regangan<br><i>Tensile strength</i>              |                                 |                      |



Latihan Kertas 2 Bahagian A  
Exercise Paper 2 Section A

1. A student conducted an experiment in her home laboratory to study the corrosion resistance properties of iron ring and stainless steel ring.  
Seorang pelajar menjalankan suatu eksperimen di rumahnya bagi mengkaji sifat ketahanan kakisan bagi cincin besi dan cincin keluli nirkarat. Rajah 2 menunjukkan keputusan eksperimen tersebut selepas 3 hari.



- (a) Based on Diagram 2:  
Berdasarkan Rajah 2,

- (i) State **one** observation for the experiment.  
Nyatakan **satu** pemerhatian bagi eksperimen ini.

[1 mark/ 1 markah]

- (ii) State **one** inference for your answer in 2(a).  
Nyatakan **satu** inferens bagi jawapan anda di 2(a).

[1 mark/ 1 markah]

- (b) State the responding variable in this experiment.  
Nyatakan pemboleh ubah bergerakbalas dalam eksperimen ini.

[1 mark/ 1 markah]

- (c) Tick (✓) in the box provided for the material that have the same properties like stainless steel ring.  
Tandakan (✓) pada petak yang disediakan bagi bahan yang mempunyai sifat yang sama seperti cincin keluli nirkarat

☐

Brass  
Loyang

☐

Copper  
Kuprum

[1 mark/ 1 markah]