

NAMA :

TINGKATAN :

1511/2
SCIENCE
PAPER 2
OKT / NOV
2008
2½ HOURS



JABATAN PELAJARAN TERENGGANU

PEPERIKSAAN AKHIR TAHUN 2008

TINGKATAN EMPAT

SCIENCE

Paper 2

Two Hours and Thirty Minutes

DO NOT OPEN THIS TEST PAPER UNTIL YOU ARE TOLD TO DO SO

- 1 This question paper consists of three sections: Section A, Section B and Section C.
- 2 Answer all questions in Section A and Section B. Write your answers for Section A and Section B clearly in the space provided on the question paper.
- 3 For Section C, answer Question 10 and choose another Question 11 or Question 12. Write your answer for Section C on the lined pages provided at the end of this paper. Answer should be clear and logical.
- 4 The marks allocated for each sub-part of a question are shown in brackets.
- 5 The time suggested to complete Section A is 60 minutes, Section B is 50 minutes and Section C is 40 minutes.
- 6 You are allowed to answer the question in English or Bahasa Melayu.

For Examiner's Use		
Section	Question	Marks
A	1	
	2	
	3	
	4	
B	5	
	6	
	7	
	8	
C	9	
	10	
	11	
	12	
Total		

This question paper consists of 18 printed pages

Section A
[20 marks]

Answer all questions in this section.

Jawab semua soalan

The time suggested to answer this section is 60 minutes
Masa yang dicadangkan untuk bahagian ini ialah 60 minit

- 1 Diagram 1.1 and Diagram 1.2 show an experiment to study the malleability of two types of substances when they were hammered for a few times.
Gambarajah 1.1 dan gambarajah 1.2 menunjukkan eksperimen untuk mengkaji kebolehtempaan dua jenis bahan apabila diketuk dengan penukul beberapa kali.



Diagram 1.1
Gambarajah 1.1

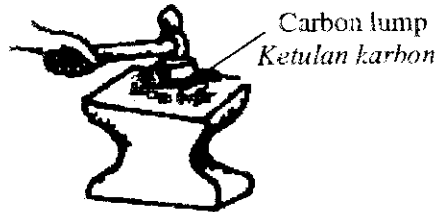


Diagram 1.2
Gambarajah 1.2

Table 1 shows the result of the experiment.
Jadual 1 menunjukkan keputusan eksperimen.

Substance Bahan	Malleability of substance Kebolehtempaan bahan
Aluminium lump Ketulan aluminium	The shape of aluminium lump changes Bentuk ketulan aluminium berubah
Carbon lump Ketulan karbon	The carbon breaks into small pieces Karbon pecah kepada serpihan kecil

Table 1
Jadual 1

- (a) Based on the result in Table 1, state one inference that you can make.
Berdasarkan keputusan dalam Jadual 1, nyatakan satu inferens yang dapat anda buat.

[1 mark]

- (b) State the variables in this experiment.
Nyatakan pembolehubah dalam eksperimen ini

(i) Manipulated variable:
Pembolehubah dimanipulasikan:

[1 mark]

- (ii) Responding variable :
Pembolehubah bergerakbalas :

.....
[1 mark]

- (c) Based on this experiment, which material is suitable for making kitchen utensils ?
Berdasarkan eksperimen ini, bahan manakah sesuai untuk dibuat alatan memasak ?

.....
[1 mark]

- (d) Aluminium is a metal. What is the operational definition for metal in this experiment?
Aluminium adalah logam. Apakah definisi secara operasi untuk logam dalam eksperimen ini?

.....
[1 mark]

- 2 Diagram 2 shows an experiment to study the heat change of the reaction between ammonium chloride and water. The temperature of the solution is recorded every 2 minutes. The result of the experiment is shown in Table 2.
Rajah 2 menunjukkan eksperimen untuk mengkaji perubahan haba bagi tindakbalas antara ammonium klorida dan air. Suhu larutan direkodkan setiap 2 minit. Keputusan eksperimen ditunjukkan dalam Jadual 2.

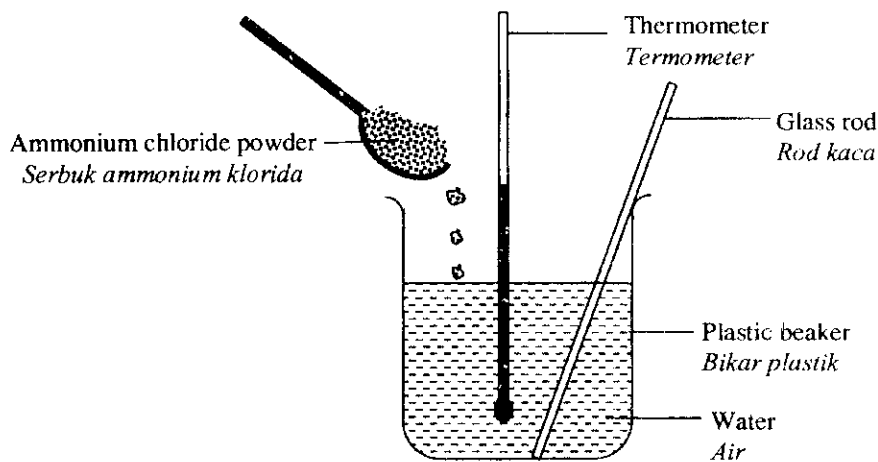


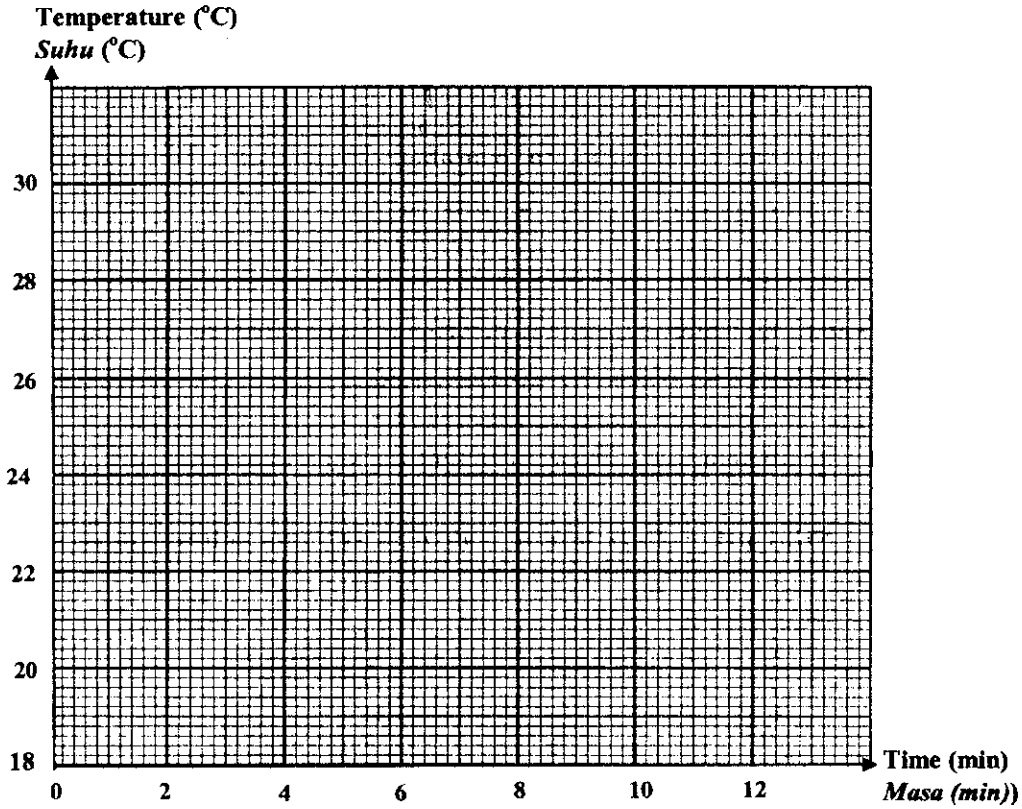
Diagram 2
Rajah 2

Time (Minutes) <i>Masa (Minit)</i>	Temperature (°C) <i>Suhu (°C)</i>
0	30
2	28
4	26
6	24
8	22

Table 2
Jadual 2

Dapatkan Skema jawapan di www.banksoalanspm.com

- (a) Based on Table 2, draw a graph of temperature against time.
Berdasarkan Jadual 2, lukis graf suhu melawan masa.



[2 marks]

- (b) Based on the graph in 2(a), state the relationship between the temperature and time.
Berdasarkan graf di 2(a), nyatakan hubungan antara suhu dan masa.

..... [1 mark]

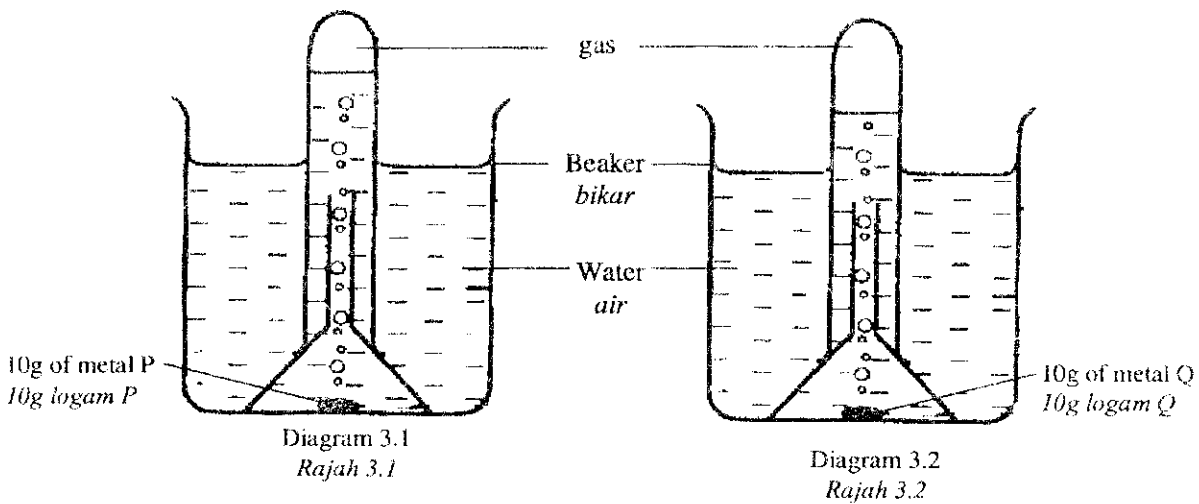
- (c) Based on the data in Table 2, state the type of reaction that takes place between ammonium chloride and water
Berdasarkan data dalam Jadual 2, nyatakan jenis tindakbalas yang berlaku antara ammonium klorida dan air.

[1 mark]

- (d) Predict the temperature of the reaction at the 9th minutes.
Ramalkan suhu tindakbalas pada minit ke 9.

[1 mark]

- 3 Diagram 3.1 and 3.2 show an experiment to compare the reactivity of metals P and Q with water.
Rajah 3.1 dan Rajah 3.2 menunjukkan eksperimen untuk membandingkan kecergasan tindak balas logam P dan logam Q dengan air.



- (a) What is the variable in this experiment?
Apakah pemboleh ubah dalam eksperimen ini?
- (i) Constant variable
Pemboleh ubah yang dimalarkan

[1 mark]

- (ii) Manipulated variable
Pemboleh ubah dimanipulasikan

[1 mark]

- (b) Write down **one** observation based on this experiment.
Tuliskan **satu** pemerhatian berdasarkan eksperimen ini.

.....
[1 mark]

- (c) State **one** inference based on the observation in (b).
Nyatakan **satu** inferens berdasarkan pemerhatian di (b).

.....
[1 mark]

- (d) State **one** hypothesis for this experiment.
Nyatakan **satu** hipotesis untuk eksperimen ini.

.....
[1 mark]

The diagram shows an experiment to study the characteristics of image formed in a pinhole camera.
Rajah menunjukkan satu eksperimen untuk mengkaji ciri-ciri imej yang terbentuk dalam kamera lubang jarum.

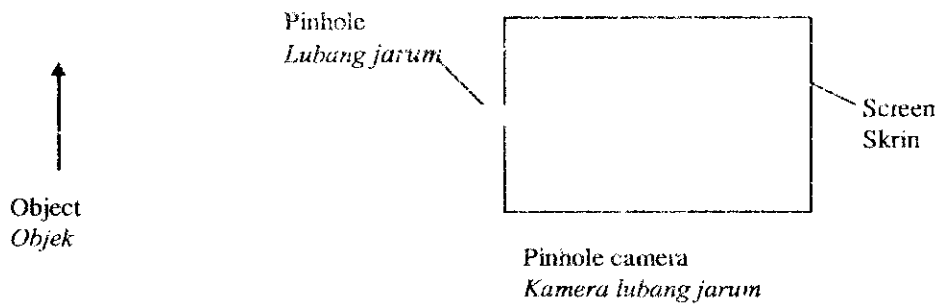


DIAGRAM 4
Rajah 4

- (a) Draw a ray diagram to show the formation of image by the pinhole camera.
Lukis rajah sinar untuk menunjukkan pembentukan imej oleh kamera lubang jarum.

[2 marks]

- (b) Measure and write down the size of the image.
Ukur dan tuliskan saiz imej yang terbentuk.

.....
[1 mark]

- (c) Predict the effect on the image if a convex lens is placed in front of the pinhole.
Ramal kesan yang berlaku pada imej sekiranya sebuah kanta cembung diletakkan di hadapan lubang jarum.

..... [1 mark]

- (d) Name **one** optical instrument that forms the same characteristics of image as the pinhole camera.
*Namakan **satu** peralatan optik yang membentuk ciri-ciri imej yang sama dengan kamera lubang jarum.*

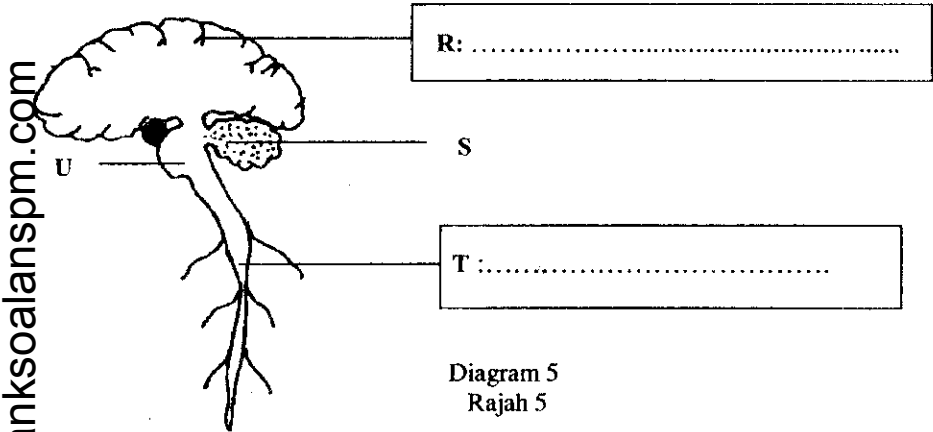
..... [1 mark]

Dapatkan Skema jawapan di www.banksoalanspm.com

Section B
[30 marks]

Answer all questions in this section.
The time suggested to answer this section is 50 minutes.

- 5 Diagram 5 shows the parts of central nervous system.
Rajah 5 menunjukkan bahagian-bahagian sistem saraf pusat.



Dapatkan Skema jawapan di www.banksoalanspm.com

- (a) Name R and T in the boxes provided in Diagram 5.
Namakan R dan T dalam kotak yang disediakan pada Rajah 5. [2 marks]
- (b) (i) State one function of R
Berikan satu fungsi R
..... [1 mark]
- (ii) Give one example of an action that controlled by R
Berikan satu contoh tindakan yang dikawal oleh bahagian berlabel R
..... [1 mark]
- (c) If part S was injured in an accident, what is the effect to the individual?
Jika bahagian S tercedera semasa kemalangan, apakah kesan kepada individu tersebut?
..... [1 mark]

- (d) Give **one** effect of drug abuse to the brain
Berikan **satu** kesan penyalahgunaan dadah ke atas otak

[1 mark]

- 6 Diagram 6 shows the formation of twins.
Rajah 6 menunjukkan pembentukan anak kembar.

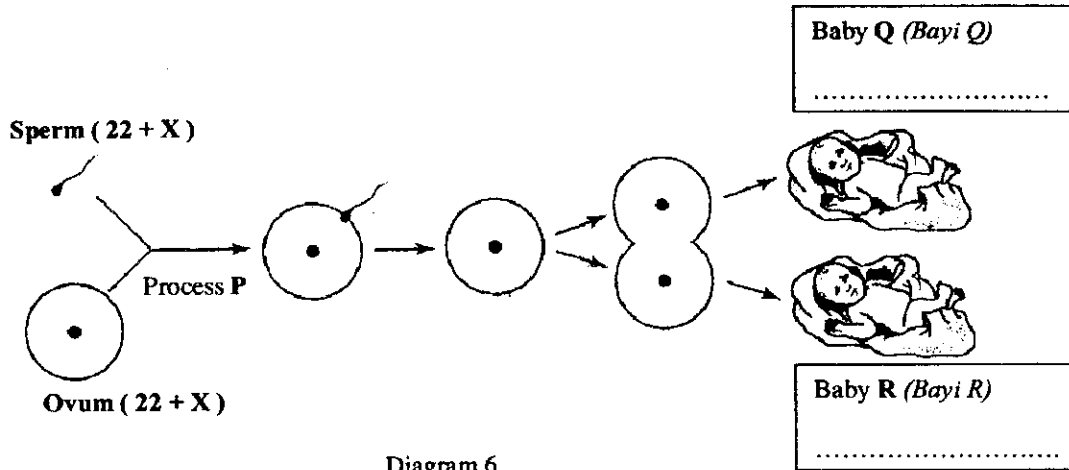


Diagram 6
Rajah 6

- (a) State the gender of baby Q and R in the box provided in Diagram 6.
Nyatakan jantina bayi Q dan R dalam kotak yang disediakan dalam Rajah 6

[2 marks]

- (b) What is process P?
Apakah proses P?

[1 mark]

- (c) (i) State the type of twins shown in Diagram 6.
Nyatakan jenis kembar yang ditunjukkan dalam Rajah 6

[1 mark]

- (ii) Give **one** reason for your answer in (b)(i).
Berikan **satu** alasan bagi jawapan anda di (b)(i).

[1 mark]

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- (d) What will happen if splitting of the zygote formed is not complete?
 Apakah yang akan berlaku jika pembahagian zigot tidak lengkap?

.....
 [1 mark]

- 7 Diagram 7 shows the type of mutation.
 Rajah 7 menunjukkan sejenis mutasi.



Diagram 7
 Rajah 7

- (a) Name the type of mutation shown in Diagram 7.
 Namakan jenis mutasi yang ditunjukkan dalam Rajah 7.

.....
 [1 mark]

- (b) Give **one** another example of the same type of mutation mentioned in (a).
 Berikan satu contoh lain yang sama dengan jenis mutasi yang dinyatakan dalam (a)

.....
 [1 mark]

- (c) State how this mutation occurs.
 Nyatakan bagaimana mutasi ini berlaku.

.....
 [1 mark]

- (d) Name the type of mutation for colour blindness.
 Namakan jenis mutasi bagi buta warna.

.....
 [1 mark]

(e) State **two** factors that caused the mutation.
*Nyatakan **dua** faktor yang menyebabkan mutasi.*

(i)

(ii).....

[2 marks]

8 Diagram 8 shows the structure of Hydrogen isotope.
Gambarajah 8 menunjukkan struktur isotop Hidrogen

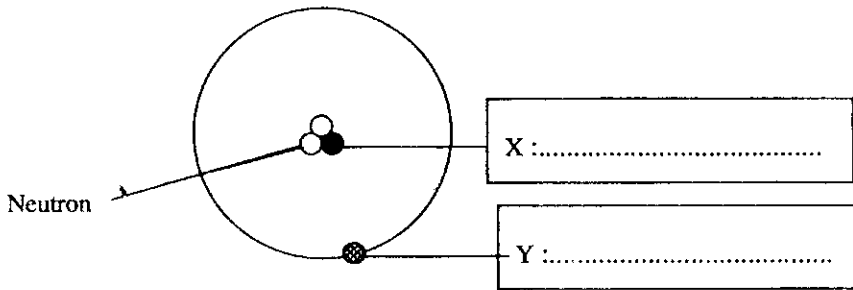


Diagram 8
Rajah 8

(a) Name the subatomic particle in the boxes provided.
Namakan zarah subatom dalam kotak yang disediakan.

[2 marks]

(b) State how many proton number and nucleon number of Hydrogen in Diagram 8.
Nyatakan berapa bilangan nombor proton dan nombor nukleon hidrogen dalam Gambarajah 8

(i) Proton number :
Nombor proton :

(ii) Nucleon number :
Nombor nukleon :

[2 marks]

(c) Hydrogen has three isotopes; Hydrogen-1, Hydrogen - 2 and Hydrogen-3. The isotopes of hydrogen are shown in Table 8.
Hidrogen mempunyai tiga isotop; Hidrogen-1, Hidrogen-2 dan Hidrogen-3. Isotop-isotop ini ditunjukkan dalam Jadual 8

Isotopes Isotop	Proton number Nombor proton	Number of neutrons Bilangan neutron
Hydrogen-1	1	0
Hydrogen-2	1	1
Hydrogen-3	1	2

Table 8
Jadual 8

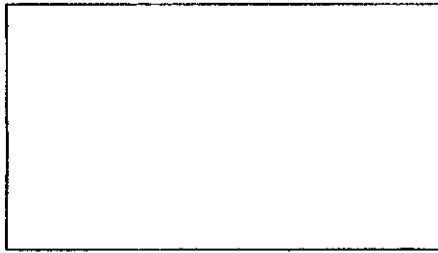
Based on Table 8,
Berdasarkan Jadual 8,

- (i) What are isotopes?
Apakah maksud isotop?

.....

[1 mark]

- (ii) Draw the structure of Hydrogen -2 in the box provided below.
Lukis struktur Hidrogen-2 dalam petak yang disediakan di bawah.



[1 mark]

Diagram 9 shows a radioactive ray in an electrical field.
Rajah 9 menunjukkan satu sinar radioaktif dalam medan elektrik.

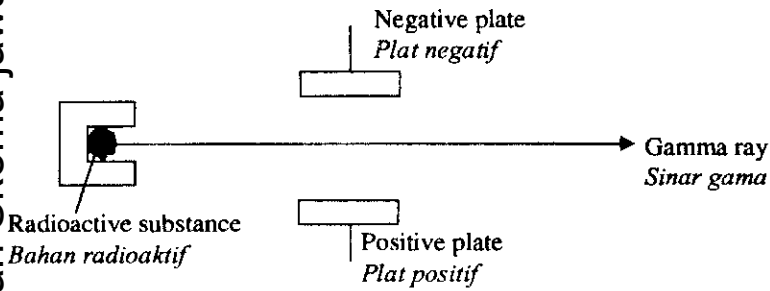


Diagram 9
Rajah 9

- (a) Complete the above diagram to show the alpha ray and beta ray in the electrical field.
Lengkapkan rajah di atas untuk menunjukkan sinar alfa dan sinar beta dalam medan elektrik.

[2 marks]

- (b) Why does gamma ray not deflect?
Mengapa sinar gama tidak terpesong?

.....
[1 mark]

- (c) Give **one** example of radioactive substance.
*Berikan **satu** contoh bahan radioaktif.*

.....
[1 mark]

- (d) What is the best method to prevent radioactive radiation from being emitted to the environment?
Apakah kaedah terbaik untuk menghalang sinaran radioaktif daripada terbebas ke persekitaran?

.....
[1 mark]

- (e) State **one** effect on human being if exposed to radioactive rays.
*Nyatakan **satu** kesan ke atas manusia jika terdedah kepada sinaran radioaktif.*

.....
[1 mark]

Section C

[20 marks]

Answer Question 10 and either Question 11 or Question 12.

Write your answers on pages 17 - 19

The time suggested to answer this section is 40 minutes

*Jawab Soalan 10 dan mana-mana **satu** daripada Soalan 11 atau Soalan 12.*

Tuliskan jawapan anda di halaman 17-19.

Masa yang dicadangkan untuk menjawab bahagian ini ialah 40 minit.

- 10 Study the following statement;
Kaji pernyataan berikut;

Convex lens with different thickness will have different focal length.
Kanta cembung dengan ketebalan yang berlainan akan mempunyai jarak fokus yang berlainan

- (a) Suggest a hypothesis to investigate the above statement.
Cadangkan satu hipotesis untuk menyiasat pernyataan di atas.. [1 mark]
- (b) Using convex lens with different thickness, a lens holder, a metre ruler and other apparatus describe an experiment to test your hypothesis in 10(a)
Dengan menggunakan kanta cembung yang berlainan ketebalan, pemegang kanta, pembaris meter dan radas lain, huraikan satu eksperimen untuk menguji hipotesis anda di 10 (a).
- (i) Aim of the experiment [1 mark]
Tujuan eksperimen
- (ii) Identification of variables [2 marks]
Pengenalpastian pembolehubah
- (iii) List of apparatus and materials [1 mark]
Senarai radas dan bahan
- (iv) Procedure or method [4 marks]
Prosedur atau kaedah
- (v) Tabulation of data [1 mark]
Penjadualan data

- (a) (i) Draw and label the arrangement of particles in copper and bronze.
Lukiskan dan label susunan zarah-zarah dalam kuprum dan gangsa
- (ii) Explain why bronze is harder than copper?
Terangkan mengapa gangsa lebih keras berbanding logam kuprum? [4 marks]
- (b) Diagram 11 shows examples of alloys
Rajah 11 menunjukkan contoh-contoh aloi.

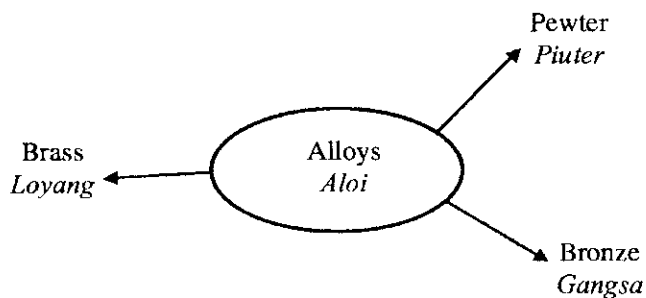


Diagram 11
Rajah 11

Study the above examples. Explain how you would develop a concept of alloy. Your explanation of concept should include the following:

Kaji contoh-contoh di atas. Terangkan bagaimana anda dapat membina konsep aloi. Penerangan anda tentang konsep seharusnya mengandungi perkara – perkara berikut ;

- Identify **two** common characteristics
(Kenalpasti **dua** ciri sepunya)
- Give **one** other example of alloy
Beri **satu** contoh lain bagi aloi
- Give **two** examples of non-alloy
Berikan **dua** contoh bukan aloi
- Relate the common characteristics to construct the concept of alloy
Hubungkan ciri sepunya untuk membina konsep aloi

[6 marks]

- 12 (a) State the meaning of electrolysis and list out its **three** of its uses in industries.
Nyatakan maksud elektrolisis dan senaraikan **tiga** kegunaan elektrolisis dalam industri.

[4 marks]

- (b) A student finds that his iron ring rusts easily. Explain how he could overcome his problem by applying his knowledge in electrolysis process.
Seorang pelajar mendapati cincin besinya mudah berkarat. Terangkan bagaimana pelajar ini boleh mengatasi masalahnya dengan mengaplikasikan pengetahuannya tentang proses elektrolisis.

Your explanation should include the following aspects :

Penerangan anda hendaklah mengandungi aspek-aspek berikut ;

- Problem statement
Pernyataan masalah
- Name of the method used
Nama kaedah yang digunakan
- Steps of the method used
Langkah-langkah yang perlu dilakukan dalam kaedah itu.

[6 marks]

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

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