

1511/2  
Science  
Paper 2  
Ogos /  
September  
2010  
2 ½ hours

NAMA : ..... TINGKATAN : .....



**JABATAN PELAJARAN NEGERI TERENGGANU**

**PEPERIKSAAN PERCUBAAN  
SIJIL PELAJARAN MALAYSIA 2010**

**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.

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

Disediakan Oleh:  
AKRAM NEGERI TERENGGANU

Dibiayai Oleh:  
KERAJAAN NEGERI TERENGGANU

**TERENGGANU ANJUNG ILMU**

Dicetak Oleh:  
Percetakan Yayasan Islam Terengganu Sdn. Bhd.  
Telefon: 609-666 8611/6652/8601 Faks: 609-666 0611/0063

This question paper consists of **21** 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 shows an experiment to study the production of electrical energy in a simple cell.  
Rajah 1 menunjukkan eksperimen untuk mengkaji penghasilan tenaga elektrik dalam satu sel ringkas.

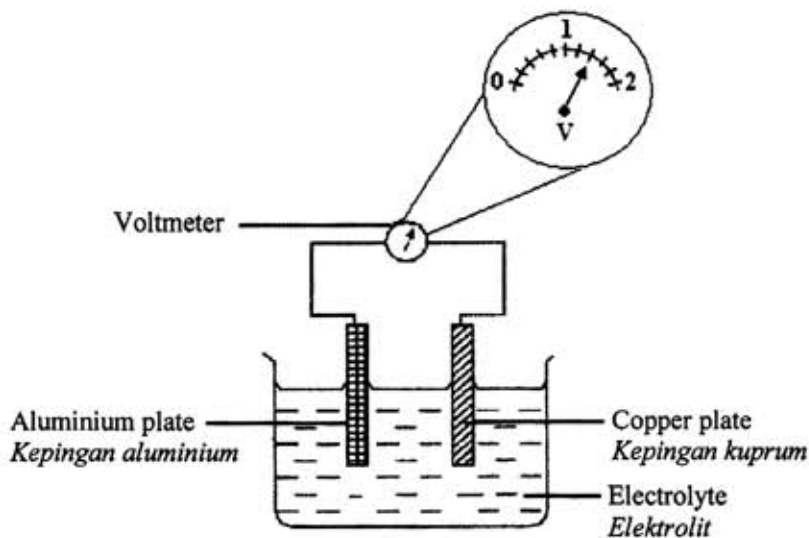


Diagram 1  
Rajah 1

The experiment is repeated by using other pairs of metals. The voltmeter reading is recorded in Table 1.

Eksperimen ini diulang dengan menggunakan pasangan logam lain. Bacaan voltmeter direkodkan dalam Jadual 1.

Pair of metals <i>Pasangan logam</i>	Voltmeter reading/V <i>Bacaan Voltmeter</i>
Zinc and copper <i>Zink dan kuprum</i>	0.8
Copper and copper <i>Kuprum dan kuprum</i>	0.0

Table 1  
Jadual 1

- (a) What is the voltmeter reading for the pair of metals, aluminium and copper?  
Apakah bacaan voltmeter bagi pasangan logam aluminium dan kuprum?

.....  
[1 mark]

- (b) Write down **one** inference based on the above observation in 1(a).  
*Tuliskan satu inferens berdasarkan pemerhatian di 1(a).*

.....  
 [1 mark]

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

(i) Manipulated variable :.....  
*Pembolehubah dimanipulasi*

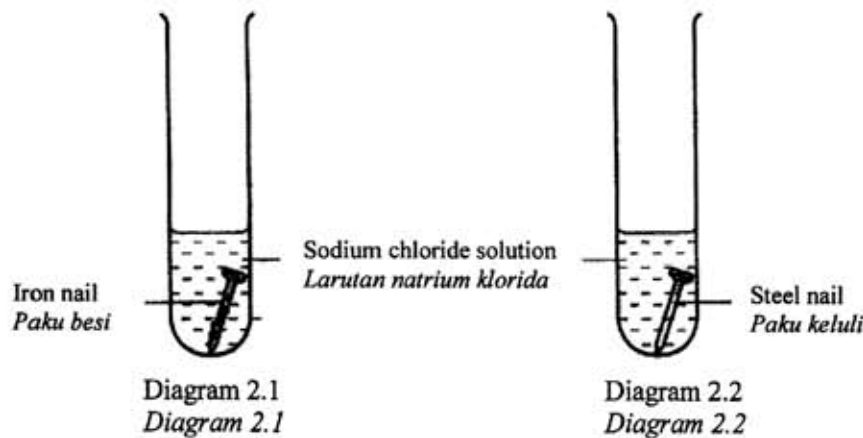
(ii) Responding variable :.....  
*Pembolehubah bergerakbalas*

[2 marks]

- (d) Predict the voltmeter reading when a pair of aluminium plates are used.  
*Ramalkan bacaan voltmeter jika pasangan kepingan logam aluminium digunakan.*

.....  
 [1 mark]

- 2 Diagram 2.1 and 2.2 show an experiment to study the corrosive resistance of iron and steel nails.  
*Rajah 2.1 dan 2.2 menunjukkan eksperimen untuk mengkaji ketahanan kakisan bagi paku besi dan paku keluli.*



The results of the experiment are recorded after two days in Table 2.  
*Keputusan eksperimen dicatat selepas dua hari dalam Jadual 2.*

Type of nail <i>Jenis paku</i>	Condition of nail <i>Keadaan paku</i>
Iron nail <i>Paku besi</i>	Brown dust sticks onto the nail <i>Serbuk perang terbentuk pada paku</i>
Steel nail <i>Paku keluli</i>	No changes onto the nail <i>Tiada perubahan pada paku</i>

Table 2  
 Jadual 2

- (a) State **one** inference from your observation on the iron nail.  
Nyatakan **satu** inferens daripada pemerhatian anda pada paku besi

.....  
[1 mark]

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

- (i) Manipulated variable  
Pembolehubah dimanipulasi

.....  
[1 mark]

- (ii) Constant variable  
Pembolehubah dimalarkan

.....  
[1 mark]

- (c) Mark (✓) the objects which have same characteristics as steel nail at Diagram 2.3  
Tandakan (✓) objek-objek yang mempunyai ciri yang sama seperti paku keluli pada Rajah 2.3




 Brass saxophone Saksofon toyang	 Aluminium pot Periuk aluminium	 Bronze medal Pingat gangsa
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Diagram 2.3  
Rajah 2.3

- (d) State the operational definition for iron nail.  
Nyatakan definisi secara operasi bagi paku besi.

.....  
[1 mark]

- 3 Diagram 3.1 shows an experiment to compare the elasticity of rubber P and rubber Q.  
*Rajah 3.1 menunjukkan eksperimen untuk membandingkan kekenyalan getah P dan getah Q.*

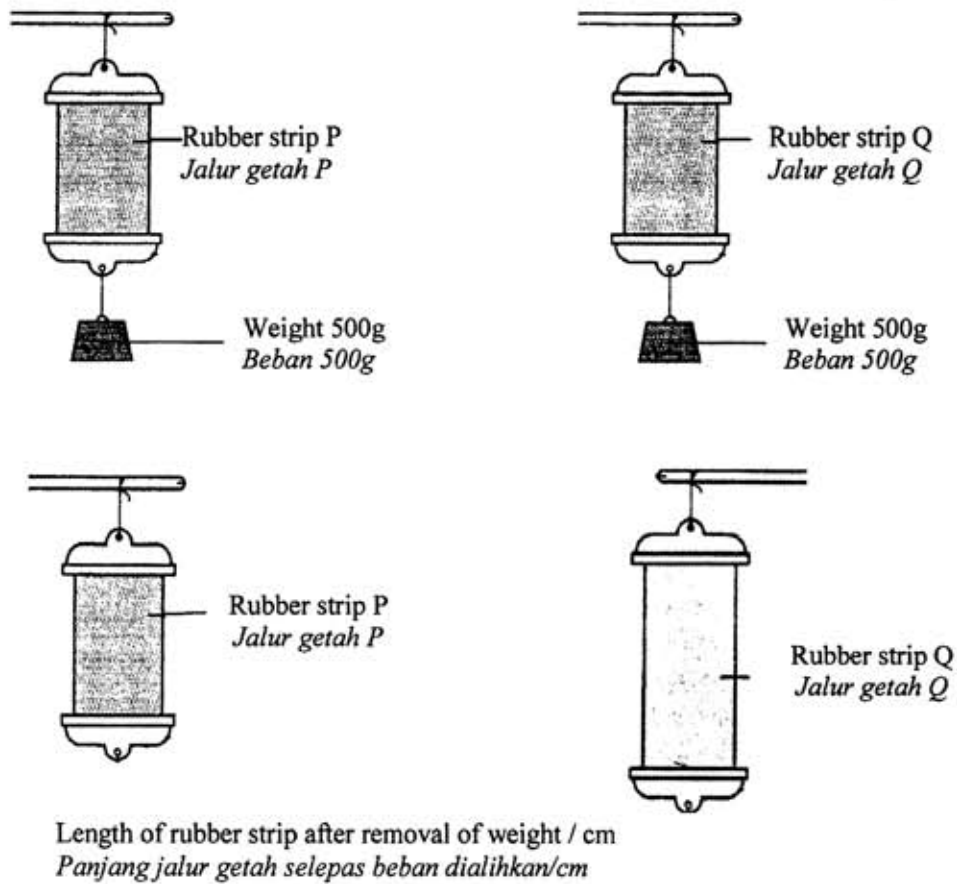


Diagram 3.1  
*Rajah 3.1*

Table 3 shows the result of the experiment.  
*Jadual 3 menunjukkan keputusan eksperimen.*

Type of rubber <i>Jenis getah</i>	Rubber P <i>Getah P</i>	Rubber Q <i>Getah Q</i>
Initial length of rubber strip/cm <i>Panjang asal jalur getah/cm</i>	1.7	1.7
Length of rubber strip after removal of weight / cm <i>Panjang jalur getah selepas beban dialihkan/cm</i>	1.9	.....

Table 3  
*Jadual 3*

- a) Write down **one** observation from the above experiment.  
*Tulis **satu** pemerhatian daripada eksperimen di atas.*

.....  
 [ 1 mark]

- b) Measure and write down the length of rubber strip Q after removed the weight at Table 3.  
*Ukur dan tulis panjang jalur getah Q selepas dialihkan beban pada Jadual 3.*

[ 1 mark]

- c) State **one** hypothesis for the experiment.  
*Nyatakan **satu** hipotesis bagi eksperimen ini.*

.....  
 [ 1 mark]

- d) State the variables in this experiment  
*Nyatakan pembolehubah bagi eksperimen*

- (i) Manipulated variables:  
*Pembolehubah dimanipulasikan:*

- (ii) Responding variables:  
*Pembolehubah bergerakbalas*

.....  
 [2 marks]

- 4 Diagram 4 shows an experiment to investigate the relationship between inertia and mass.  
*Rajah 4 menunjukkan satu eksperimen untuk mengkaji hubungan antara inersia dan jisim*

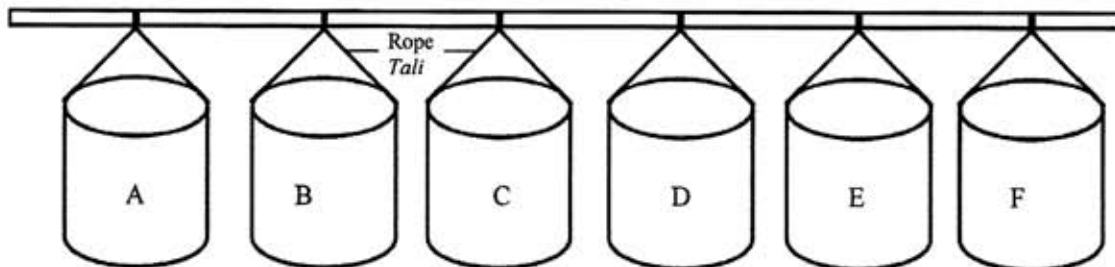


Diagram 4  
 Rajah 4

Six cans with different mass are pushed at the same time by the same force. The time taken by each can to stop from its swinging is recorded.  
*Enam tin berlainan jisim ditolak pada masa yang sama dengan daya yang sama. Masa yang diambil oleh setiap tin untuk berhenti berayun dicatat.*

The results of the experiment are recorded in Table 4.  
Keputusan eksperimen dicatatkan di dalam Jadual 4.

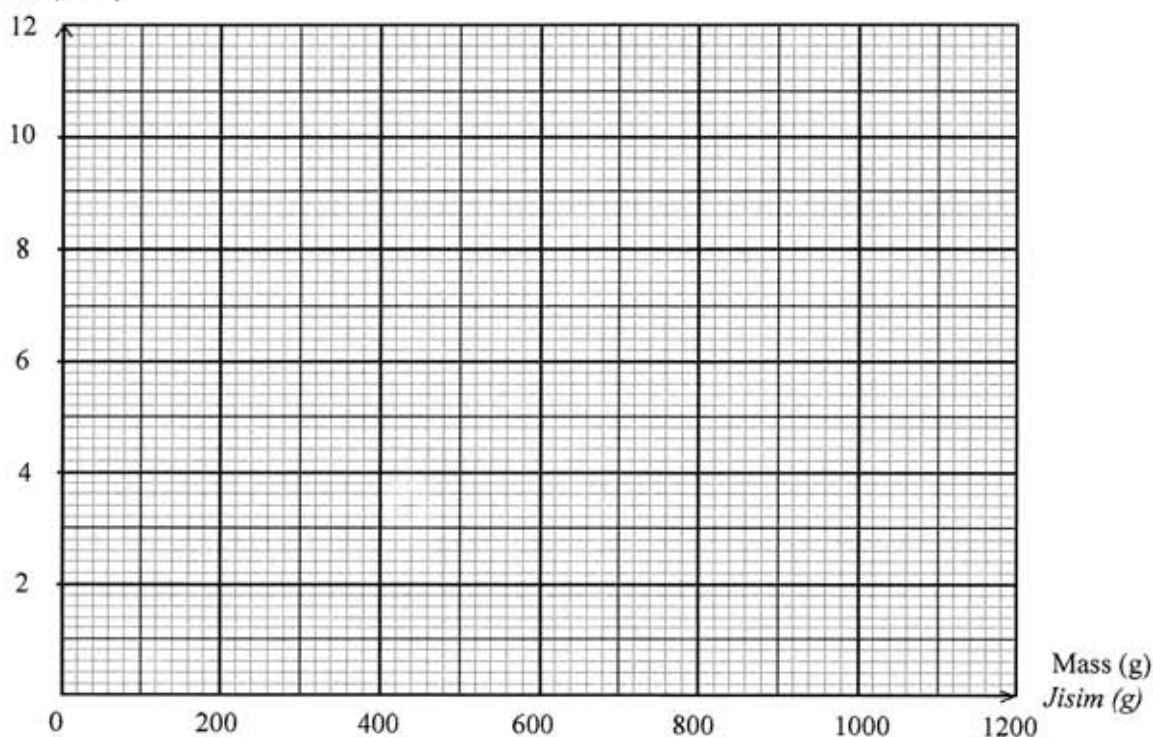
Mass of Can <i>Jisim tin</i>	A 200g	B 400g	C 600g	D 800g	E 1000g	F 1200g
Time taken for can to stop (minutes) <i>Masa yang di ambil untuk tin berhenti (minit)</i>	1.8	3.6	5.4	7.2	9	10.8

Table 4  
Jadual 4

- (a) Using the data in Table 4, draw a graph of the time taken against mass.  
Menggunakan data dalam Jadual 4, lukis graf masa yang diambil melawan jisim.

[ 2 marks]

Time taken (minute)  
*Masa (minit)*



- (b) What is the relationship between time taken and mass ?  
Apakah hubungan antara masa yang diambil dan jisim?

.....  
[1 mark]

- (c) State the constant variable.  
*Nyatakan pembolehubah dimalarkan.*

..... [1 mark]

- (d) Predict the time taken if can mass is 500 g.  
*Ramalkan masa yang diambil jika jisimnya ialah 500 g.*

..... minit [1 mark]

**Section B**  
 [30 marks]

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

- 5 Diagram 5 shows an incomplete Periodic Table.  
*Rajah 5 menunjukkan lakaran Jadual Berkala yang tidak lengkap.*

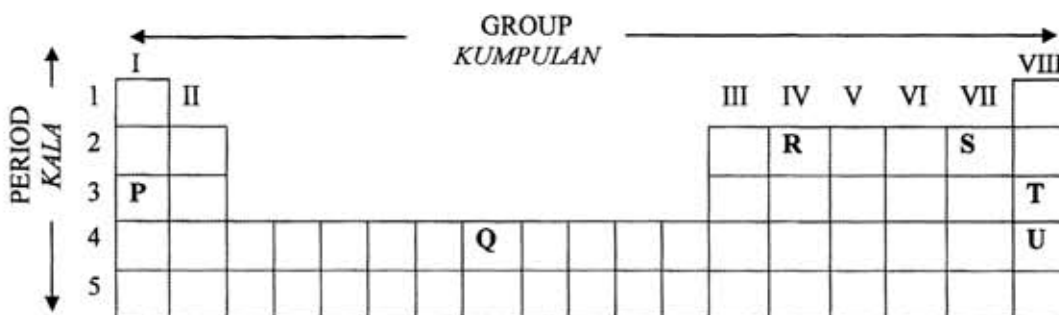


Diagram 5  
 Rajah 5

- (a) How are the elements in the Periodic Table arranged?  
*Bagaimanakah unsur-unsur dalam Jadual Berkala disusun?*

..... [1 mark]

- (b) Based on Diagram 5, state  
*Berdasarkan Rajah 5, nyatakan*

- (i) the type of element Q  
*jenis unsur Q*

.....

- (ii) the element with the biggest proton number.  
*unsur yang mempunyai nombor proton paling besar.*

.....  
 [2 marks]

- (c) State the changes of element type from P to T in the Periodic Table.  
*Nyatakan perubahan jenis unsur dari P ke T dalam Jadual Berkala.*

.....  
 [1 mark]

- (d) State **one** similar characteristic between element T and element U.  
*Nyatakan **satu** sifat yang sama antara unsur T dan unsur U.*

.....  
 [1 mark]

- (e) Based on Diagram 5, state two elements which will form an ionic substance when combined.  
*Berdasarkan Rajah 5, nyatakan dua unsur yang akan membentuk bahan ion apabila bergabung.*

.....  
 [1 mark]

- 6 Diagram 6.1 shows a yellow light and a blue light projected on a white screen.  
*Rajah 6.1 menunjukkan cahaya kuning dan cahaya biru dipancarkan ke skrin putih.*

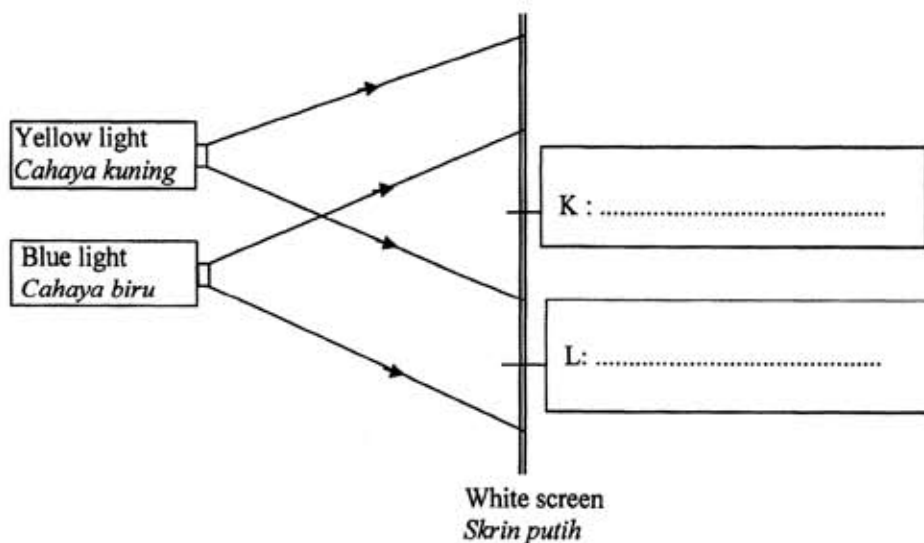


Diagram 6.1  
 Rajah 6.1

- (a) Complete the colours of K and L in the boxes in Diagram 6.1  
*Lengkapkan warna K dan L dalam kotak pada Rajah 6.1* [2 marks]
- (b) Based on Diagram 6.1, state **one** primary colour and **one** secondary colour.  
*Berdasarkan Rajah 6.1, nyatakan **satu** warna primer dan **satu** warna sekunder.*
- (i) Primary colour : .....  
*Warna primer*
- (ii) Secondary colour : .....  
*Warna sekunder*

[2 marks]

Diagram 6.2 shows the white light ray that is projected onto two colour filters.  
*Rajah 6.2 menunjukkan sinar cahaya putih dipancarkan ke atas dua penapis warna.*

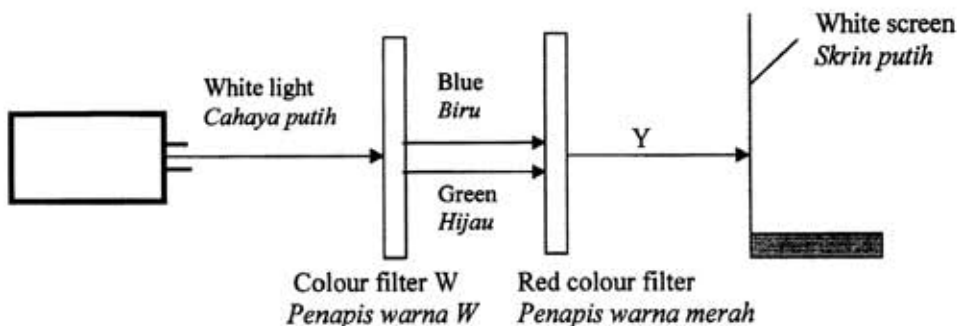


Diagram 6.2  
*Rajah 6.2*

- (c) What is the colour of filter W and light Y in Diagram 6.2?  
*Apakah warna penapis W dan warna cahaya Y pada Rajah 6.2?*
- (i) Filter W/Penapis W : .....
- (ii) Colour of light Y/Warna cahaya Y : .....

[2 marks]

- 7 Diagram 7.1 shows the process of making soap in laboratory.  
Rajah 7.1 menunjukkan proses membuat sabun di makmal.

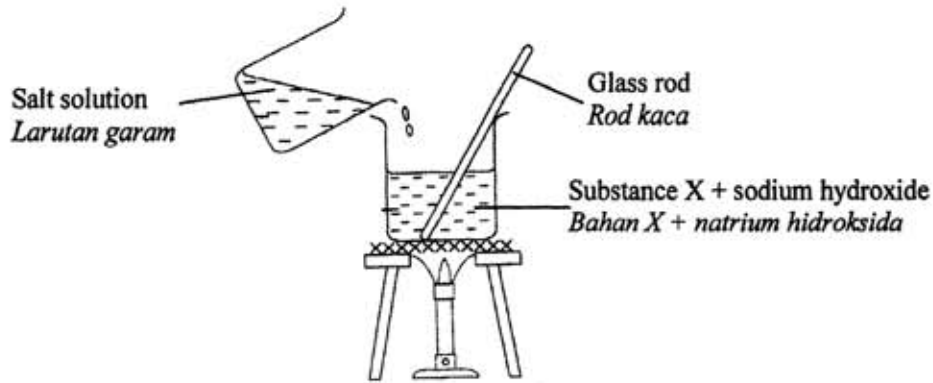


Diagram 7.1  
Rajah 7.1

- (a) What is substance X?  
Apakah bahan X?

.....  
[1 mark]

- (b) Name the process of making soap.  
Namakan proses membuat sabun.

.....  
[1 mark]

- (c) What is the purpose of adding salt solution in substance X and sodium hydroxide?  
Apakah tujuan menambahkan larutan garam ke dalam bahan X dan natrium hidroksida?

.....  
[1 mark]

- (d) Diagram 7.2 shows the structure of soap molecule. Label the parts in the box provided.  
*Rajah 7.2 menunjukkan struktur molekul sabun. Label bahagian-bahagian sabun dalam kotak yang disediakan.*

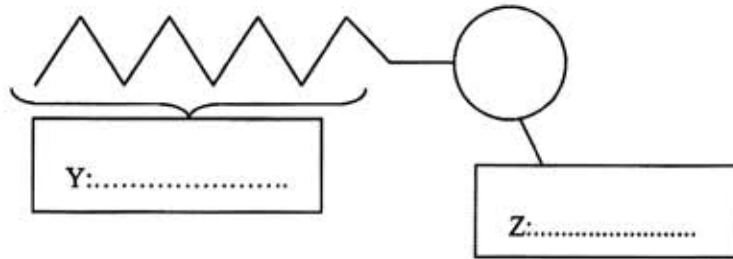


Diagram 7.2  
*Rajah 7.2*

[2 marks]

- (e) Name the part of soap molecule that dissolves in water.  
*Namakan bahagian molekul sabun yang larut dalam air.*

.....  
 [1 mark]

- 8 Diagram 8 shows a labeled container of a processed food.  
*Rajah 8 menunjukkan sebuah bekas berlabel bagi makanan yang telah diproses.*

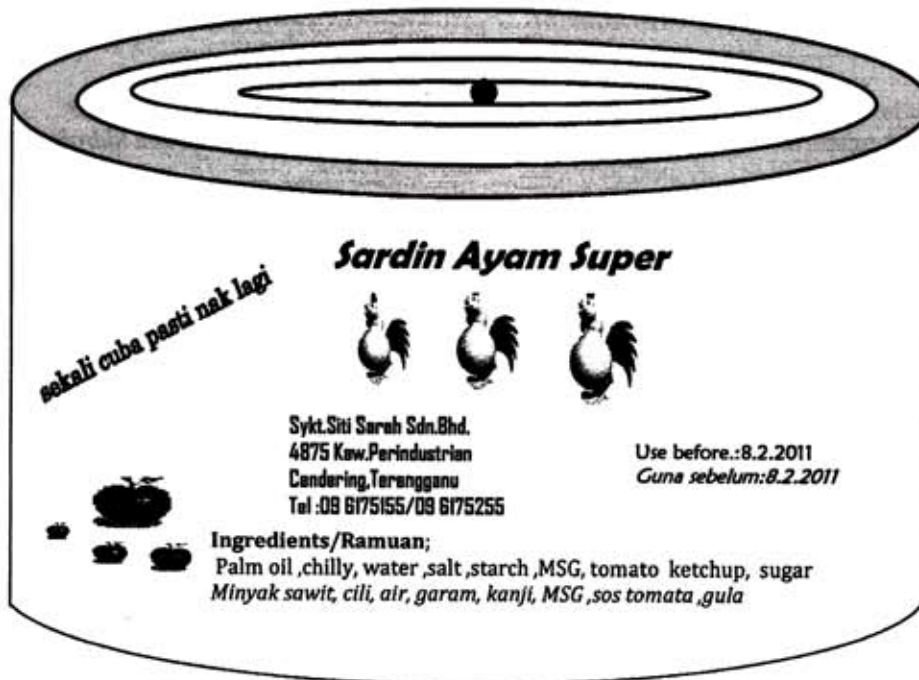


Diagram 8  
*Rajah 8*

- (a) State another information needs to be added to the label in Diagram 8 according to Food Regulations 1985.  
*Nyatakan satu maklumat lain yang perlu ditambah ke dalam label pada Rajah 8 mengikut Peraturan Makanan 1985.*

.....  
[1 mark]

- (b) Name another method of food processing that can be used to preserve chicken.  
*Namakan satu kaedah lain pemprosesan makanan yang boleh digunakan untuk mengawet ayam.*

.....  
[1 mark]

- (c) Based on the Diagram 8, state the function of starch.  
*Berdasarkan Rajah 8, nyatakan fungsi kanji.*

.....  
[1 mark]

- (d) Identify the advantage and disadvantage of the food preservation method above.  
*Kenalpasti kebaikan dan keburukan daripada proses pengawetan makanan di atas.*

- (i) Advantage  
*Kebaikan*

- (ii) Disadvantage  
*Keburukan*

.....  
[2 marks]

- (e) What is the importance of expiry date when buying processed food?  
*Apakah kepentingan tarikh luput apabila membeli makanan yang telah diproses?*

.....  
[1 mark]

- 9 Diagram 9.1 shows the structure of polymer plastic.  
Rajah 9.1 menunjukkan struktur polimer plastik.

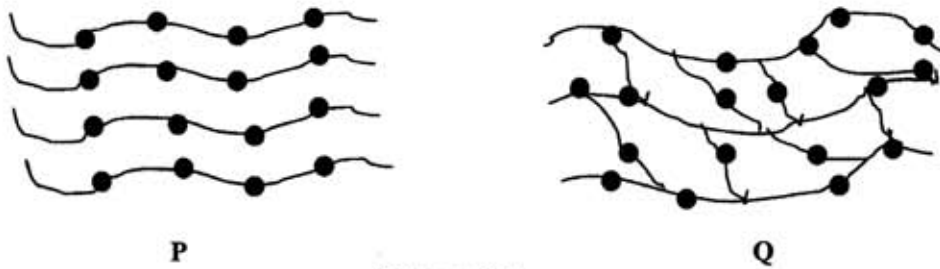


Diagram 9.1  
Rajah 9.1

- (a) Based on Diagram 9.1, which is the polymer structure is;  
Berdasarkan Rajah 9.1, manakah struktur polimer adalah;

- (i) of thermosets ?  
plastik termoset ?

.....  
[1 mark]

- (ii) that can be remoulded and recycled ?  
yang boleh diacu dan dikitar semula ?

.....  
[1 mark]

- (b) State **one** characteristic of the thermosets.  
Nyatakan **satu** ciri plastik termoset.

.....  
[1 mark]

- (c) State **one** example of plastic which has the structure of polymer P.  
Nyatakan **satu** contoh plastik yang mempunyai struktur polimer P.

.....  
[1 mark]

- (d) Mark (✓) the materials which can be produced from the plastic P in Diagram 9.2.  
 Tandakan (✓) bahan-bahan yang boleh dihasilkan daripada plastik P pada Rajah 9.2.





			
Melamine bowl <i>Mangkuk melamin</i>	Syampoo's bottle <i>Botol syampu</i>	Telephone <i>Telefon</i>	Plastic plate <i>Pinggang plastik</i>

Diagram 9.2  
 Rajah 9.2

[1 mark]

- (e) What is the effect of improper disposal of plastics on the invironment ?  
 Apakah kesan pelupusan plastik secara tidak teratur terhadap alam sekitar ?

.....  
 [1 mark]

## Section C

[20 marks]

Answer **Question 10** and either **Question 11** or **Question 12**.

Write your answers on pages 19 - 21

*Jawab Soalan 10 dan mana-mana satu daripada Soalan 11 atau Soalan 12.**Tuliskan jawapan anda di halaman 19-21*

- 10 Study the following statement;  
Kaji pernyataan berikut :

**pH value affect the growth of bacteria**  
*Nilai pH mempengaruhi pertumbuhan bakteria*

You are given three substances:

*Anda diberi tiga bahan:*

Three sterillized test tubes/ *Tiga tabung uji steril*  
Nutrient broth/*Bubur nutrien*  
Sterilized cotton wool /*Kapas steril*  
Hydrochloric acid solution/ *Larutan Asid hidroklorik*  
Sodium hydroxide solution/ *Larutan Natrium hidroksida*  
Distilled water / *Air suling*

- (a) Suggest **one** hypothesis to investigate the above statement.  
*Cadangkan satu hipotesis yang sesuai untuk menyasiat pernyataan di atas.* [1 mark]
- (b) Describe **one** experiment to test your hypothesis in 10(a) based on the following criteria:  
*Huraikan satu eksperimen untuk menguji hipotesis di 10(a) berdasarkan kriteria berikut :*
- (i) Aim of the experiment  
*Tujuan eksperimen* [1 mark]
- (ii) Identification of variables  
*Mengenalpasti pembolehubah* [2 marks]
- (iii) List of apparatus and materials  
*Senarai radas dan bahan* [1 mark]
- (iv) Procedure or method  
*Prosedur atau kaedah* [4 marks]
- (v) Tabulation of data  
*Penjadualan data* [1 mark]

- 11 (a) State **two** differences between continuous and discontinuous variation.  
 Nyatakan **dua** perbezaan antara variasi selanjur dan variasi tak selanjur.  
 Give **two** importance of variation.  
 Nyatakan **dua** kepentingan variasi
- (b) Diagram 11 shows four characteristics in a human.  
 Rajah 11 menunjukkan empat sifat yang terdapat pada setiap manusia.

[4 marks]

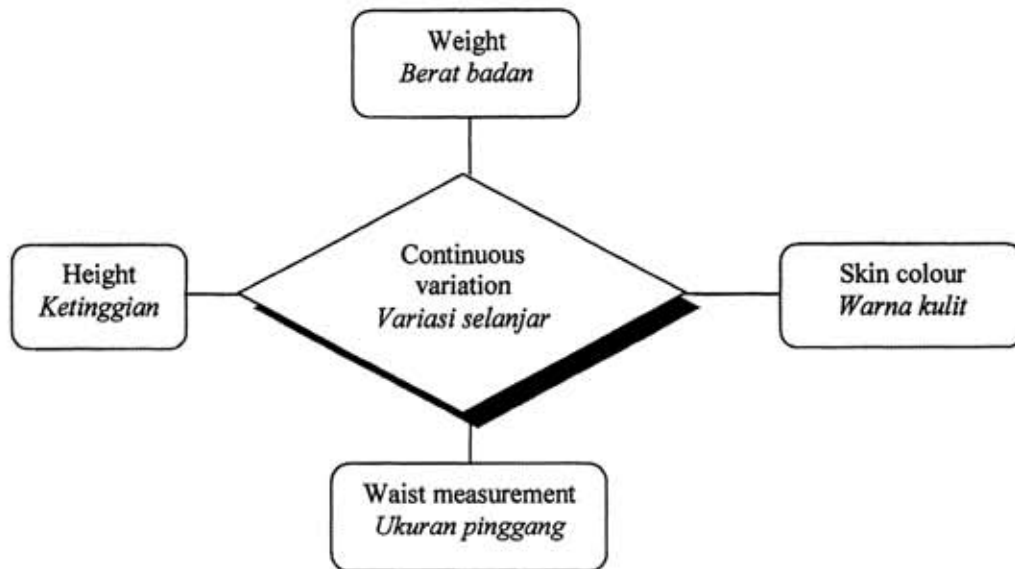


Diagram 11  
 Rajah 11

Based on the above information, construct the concept of continuous variation.  
 Berdasarkan maklumat di atas, binakan konsep variasi selanjur.

Your answer should be based on the following aspects;  
 Jawapan anda hendaklah berdasarkan aspek-aspek berikut;




- Identify **two** common characteristic  
 Kenalpasti **dua** ciri sepunya [2 marks]
- Give **one** other example of continuous variation.  
 Berikan **satu** contoh lain bagi variasi selanjur. [1 mark]
- Give **two** non-example of continuous variation.  
 Berikan **dua** bukan contoh variasi selanjur. [2 marks]
- Relate the common characteristics to construct the concept of continuous variation  
 Hubungkan ciri sepunya untuk membina konsep variasi selanjur [1 mark]

- 12 (a) Name **two** diseases that are caused by malnutrition.  
*Namakan **dua** penyakit yang disebabkan oleh malnutrisi.*

State the deficiency food classes that cause each disease.  
*Nyatakan kekurangan kelas makanan yang menyebabkan setiap penyakit tersebut.*

[4 marks]

- (b) Siti's baby is undergoing growth. Choose the most suitable meal for her baby.  
*Bayi Siti sedang mengalami tumbesaran. Pilih makanan paling sesuai untuk bayinya.*

<p>Meal 1 <i>Makanan 1</i></p>  <p>Milk <i>Susu</i></p>	<p>Meal 2 <i>Makanan 2</i></p>  <p>Cheese biscuit <i>Biskut keju</i></p>	<p>Meal 3 <i>Makanan 3</i></p>  <p>Rice Porridge <i>Bubur nasi</i></p>
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Choose the most suitable meal for Siti's baby. Explain your choice based on the following aspects :

*Pilih makanan yang paling sesuai untuk bayi Siti. Terangkan pilihan anda berdasarkan aspek berikut :*

- Aim of choice  
*Tujuan pemilihan.* [1 mark]
- Explanation on each type of meal based on the **food class** and its **function**.  
*Penjelasan tentang makanan berdasarkan kelas makanan dan fungsinya.* [3 marks]
- List the type of meal according to its priority.  
*Senarai makanan mengikut urutan keutamaannya.* [1 mark]
- The reason for your choice.  
*Sebab kepada pemilihan anda.* [1 mark]

**END OF QUESTION PAPER**  
**KERTAS SOALAN TAMAT**





