

SULIT

1511/2

1511/2
SCIENCE
Paper 2
Mei 2011
2 1/2 jam

NAMA : TINGKATAN :



JABATAN PELAJARAN NEGERI TERENGGANU

**PEPERIKSAAN PERTENGAHAN TAHUN (OTI 1)
SIJIL PELAJARAN MALAYSIA 2011**

SCIENCE

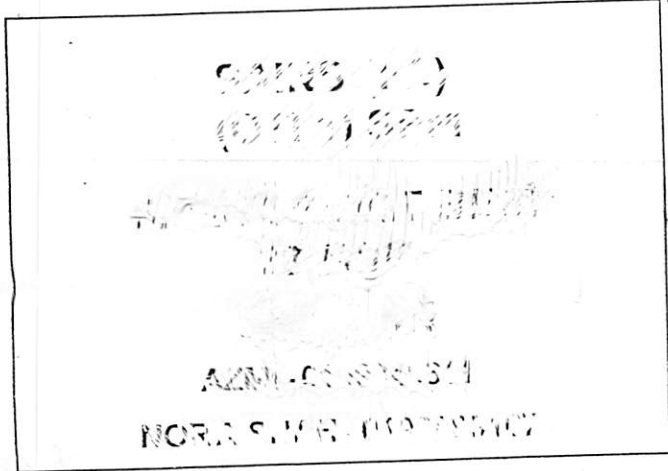
Paper 2

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		



Dibiayai oleh:
KERAJAAN NEGERI TERENGGANU

BUKU ANJUNG ILMU

ditetak oleh:
Islam Terengganu Sdn. Bhd.
8601 Faks: 609-666 0611/0063

bermudungi 19 halaman bercetak

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Section A
[20 marks / 20 markah]

Answer all questions in this section.

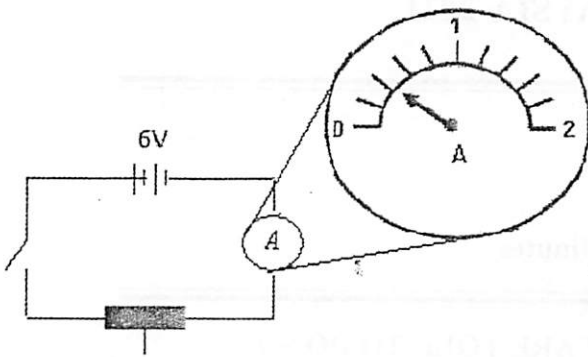
Jawab semua soalan

The time suggested to answer this section is 60 minutes

Masa yang dicadangkan untuk bahagian ini ialah 60 minit

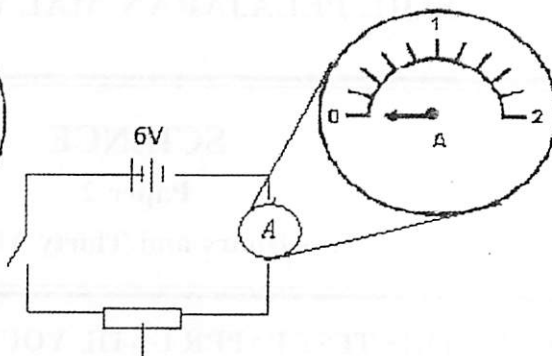
1 Diagram 1.1 and Diagram 1.2 show an experiment to study the electrical conductivity for two types of material.

Rajah 1.1 dan Rajah 1.2 menunjukkan satu eksperimen untuk mengkaji kekonduksian elektrik bagi dua jenis bahan



Copper rod
Rod kuprum

Diagram 1.1
Rajah 1.1



Glass rod
Rod kaca

Diagram 1.2
Rajah 1.2

(a) (i) What is the reading of the ammeter in Diagram 1.1?
Apakah bacaan ammeter pada Rajah 1.1?

.....A

(ii) State one inference for this experiment.
Nyatakan satu inferens bagi eksperimen ini

..... [2 marks]

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

(i) Manipulated variable
Pembolehubah dimanipulasi :

(ii) Responding variable
Pembolehubah bergerak balas : [2 marks]

(c) Copper rod is a metal. What is the operational definition for metal?
Rod kuprum adalah logam. Apakah definisi secara operasi bagi logam?

..... [1 mark]

[Lihat sebelah
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- 2 Diagram 2 shows an experiment to study the reaction between calcium and water.
Rajah 2 menunjukkan eksperimen untuk mengkaji tindak balas di antara logam kalsium dengan air.

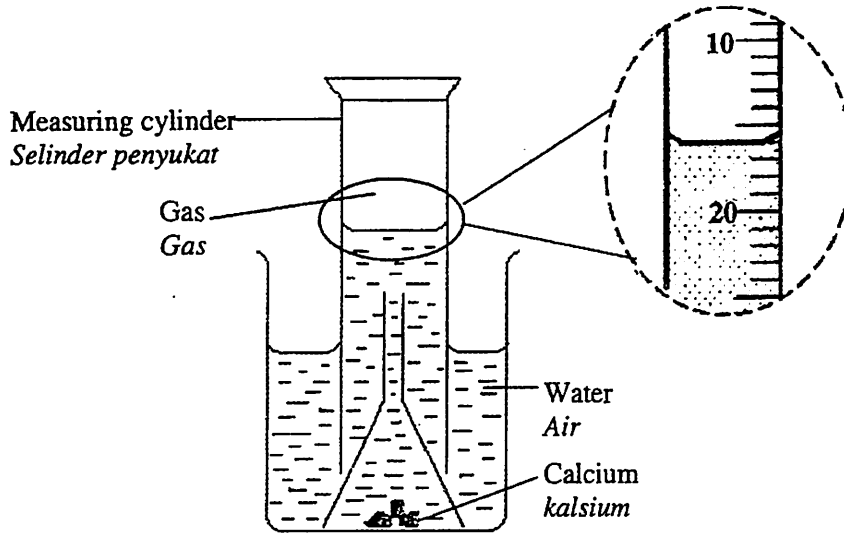


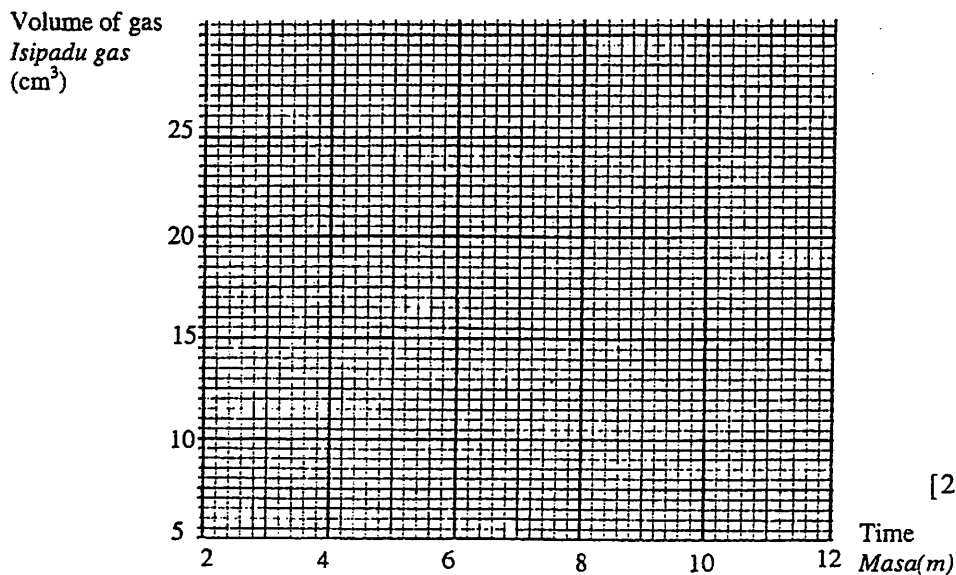
Diagram 2
Rajah 2

The volume of gas collected in every 2 minutes is recorded in Table 2.
Isipadu gas yang terkumpul bagi setiap dua minit dicatatkan dalam Jadual 2.

Time (min) <i>Masa (min)</i>	2	4	6	8	10	12
Volume of gas <i>Isipadu gas (cm³)</i>	7.5	12	21	23	23

Table 2
Jadual 2

- (a) Based on Diagram 2, complete Table 2
Berdasarkan Rajah 2, lengkapkan Jadual 2 [1 mark]
- (b) Using data in Table 2, draw a graph volume of gas against time.
Dengan menggunakan data daripada jadual 2, lukiskan graf isipadu gas melawan masa.



[2 marks]

- (c) Based on the graph, predict the volume of gas at 14th minute
Berdasarkan graf, ramalkan isipadu gas pada minit ke-14

.....
 [1 mark]

- (d) What is the relationship of volume of gas collected and time?
Apakah hubungan antara isipadu gas yang dikumpulkan dengan masa?

.....
 [1 mark]

- 3 Diagram 3 shows an experiment to study the effect of temperature on the growth of bacteria.
Rajah 3 menunjukkan suatu eksperimen untuk mengkaji kesan suhu ke atas pertumbuhan bakteria

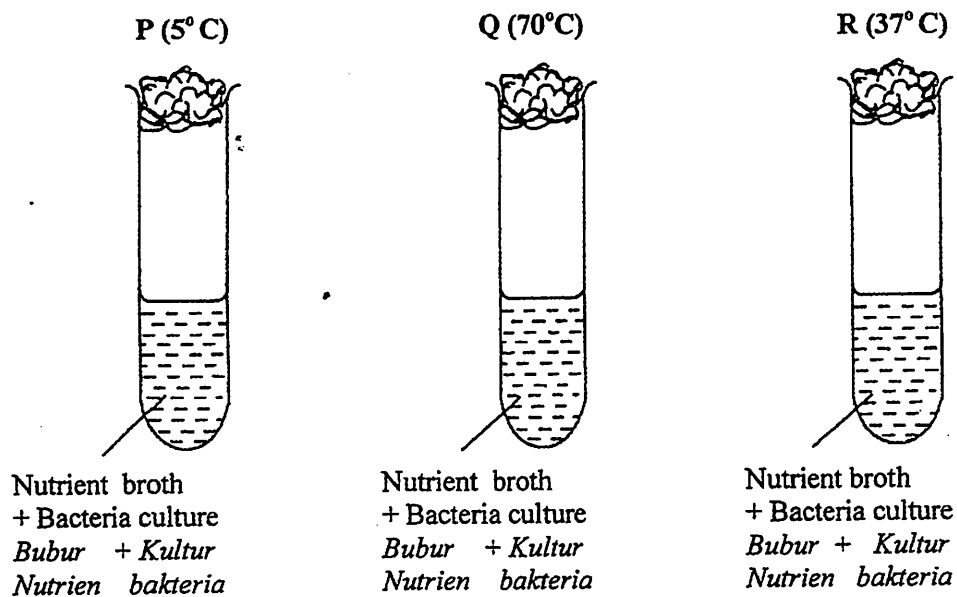


Diagram 3
Rajah 3

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After two days, the condition of the mixture in each test tube is observed.
 Table 3 shows the result of this experiment.
*Selepas dua hari, keadaan campuran dalam setiap tabung uji diperhatikan.
 Jadual 3 menunjukkan keputusan eksperimen ini*

Test tube <i>Tabung uji</i>	Temperature <i>Suhu</i>	Cloudiness nutrient broth <i>Kekeruhan bubur nutrien</i>
P	5°C	Slightly cloudy <i>Kurang keruh</i>
Q	70°C	Slightly cloudy <i>Kurang keruh</i>
R	37°C	Very cloudy <i>Sangat keruh</i>

Table 3
Jadual 3

- (a) State the variables in this experiment.
Nyatakan pemboleh ubah dalam eksperimen ini.
- (i) Manipulated variable:
Pembolehubah dimanipulasi:
-
- (ii) Constant variable:
Pembolehubah dimalarkan:
-
- [2 marks]
- (b) Based on Table 3,
Berdasarkan Jadual 3,
- (i) What is the suitable temperature for the growth of bacteria?
Apakah suhu paling sesuai untuk pertumbuhan bakteria?
-
- (ii) State the inference that you can make.
Nyatakan inferens yang dapat anda buat.
-
- [2 marks]
- (c) State the hypothesis that can be made from this experiment
Nyatakan hipotesis yang boleh dibuat daripada eksperimen ini.
-
- [1 mark]

- 4 Diagram 4 shows the experiment to study the elasticity of rubber band P and rubber band Q.
 Rajah 4 menunjukkan satu eksperimen untuk mengkaji kekenyalan gelang getah P dan gelang getah Q.

Both rubber band were stretched for a few minutes then released
 Kedua-dua gelang getah diregangkan selama beberapa minit kemudian dilepaskan

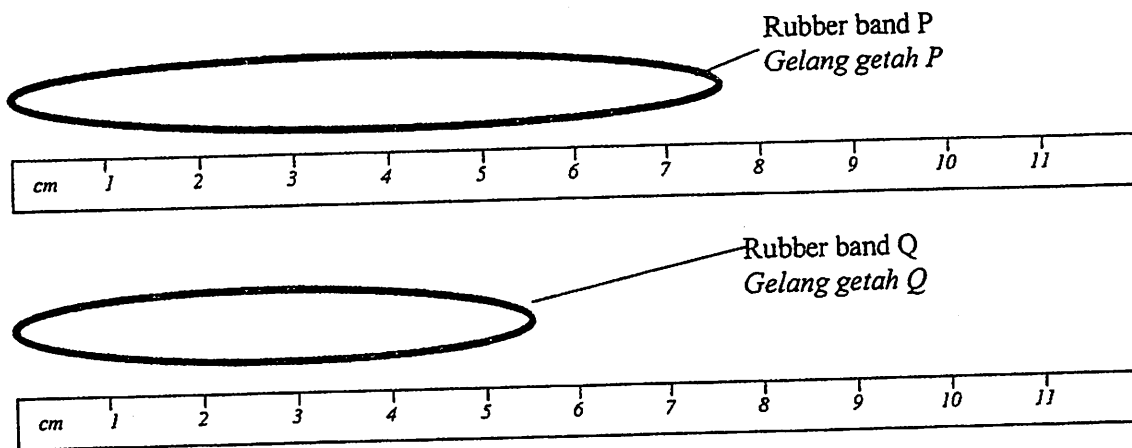


Diagram 4
 Rajah 4

The result of the experiment is shown in Table 4
 Keputusan eksperimen ditunjukkan dalam Jadual 4

Type of rubber band Jenis gelang getah	Initial length (cm) Panjang asal (cm)	Final length (cm) Panjang akhir (cm)
P	5.5
Q	5.5	5.5

Table 4
 Jadual 4

- (a) Based on the above experiment, complete the Table 4
 Berdasarkan eksperimen di atas, lengkapkan Jadual 4

[1 mark]

- (b) State the following variables:
 Nyatakan pemboleh ubah berikut:

- (i) Manipulated variable
 Pemboleh ubah dimanipulasi:

.....

- (ii) Constant variable:
 Pemboleh ubah dimalarkan:

.....

[2 marks]

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- (c) State the operational definition of vulcanised rubber
Nyatakan definisi secara operasi bagi getah ter Vulkan.

[1 mark]

- (d) Write **one** inference for the above experiment.
Tuliskan satu inferens bagi eksperimen di atas.

[1 mark]

Section B
[30 marks / 30 markah]

Answer all questions in this section.
Jawab semua soalan
The time suggested to answer this section is 50 minutes
Masa yang dicadangkan untuk bahagian ini ialah 50 minit

Diagram 5 shows the crossbreeding of the Dura variety with the Pisifera variety to produce Tenera variety of oil palm.
Rajah 5 menunjukkan kacukan kelapa sawit jenis Dura dan Pisifera untuk menghasilkan jenis Tenera.

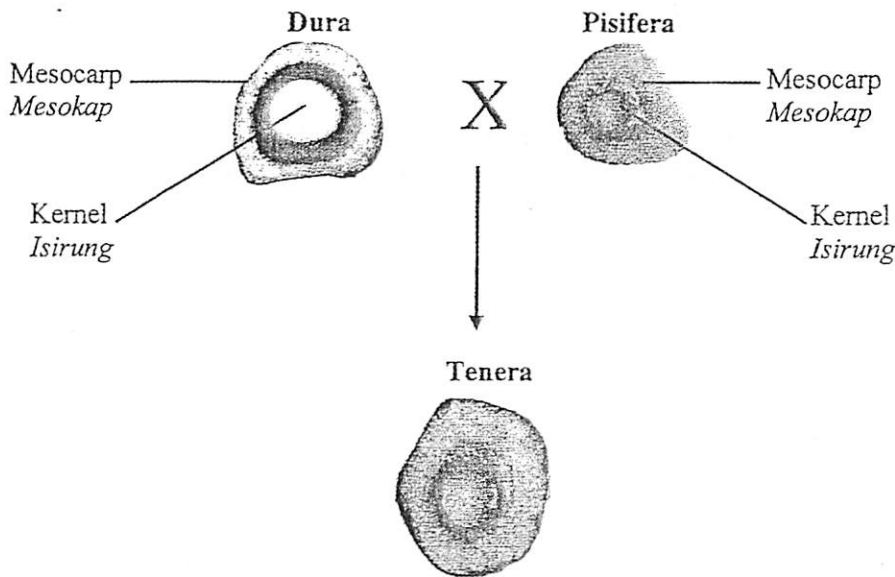


Diagram 5
Rajah 5

- (a) State **one** characteristic of each of the following oil palm fruit:
Nyatakan satu ciri yang terdapat pada setiap jenis buah kelapa sawit berikut:

- (i) Dura:.....
- (ii) Pisifera:.....

[2 marks]

- (b) What is the purpose of the crossbreeding of the oil palm ?
 Apakah tujuan kacukan kelapa sawit tersebut dilakukan?

.....
 [1 mark]

- (c) State the importance of the selective breeding above in the country's economy.
 Nyatakan kepentingan pembiak bakaan di atas dalam ekonomi negara.

.....
 [1 mark]

- (d) Mark (✓) at the field that involved in genetic research.
 Tandakan (✓) pada bidang yang terlibat dengan penyelidikan genetik.

Breeding of livestock <i>Penternakan</i>	Archaeology <i>Arkeologi</i>	Medicine <i>Perubatan</i>

[1 mark]

- (e) State one disadvantage of genetic research.
 Nyatakan satu keburukan penyelidikan genetik.

.....
 [1 mark]

- 6 Diagram 6 shows the deflection of radioactive rays across an electric field.
 Rajah 6 menunjukkan pemelindasan sinaran radioaktif melalui suatu medan elektrik.

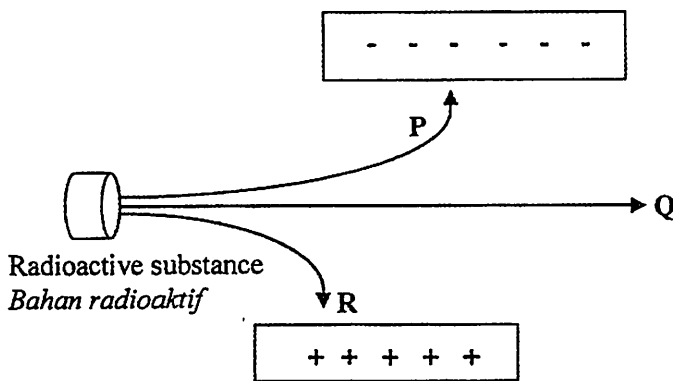


Diagram 6
 Rajah 6

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(a) Name the rays P and Q
 Namakan sinar P dan Q

(i) Ray P / Sinar P :

(ii) Ray Q / Sinar Q :

[2 marks]

(b) What is the charge of radioactive ray Q?
 Apakah cas bagi sinar radioaktif Q?

.....
 [1 mark]

(c) Why is ray R attracted to the positive plate?
 Mengapakah sinaran R tertarik ke plat positif?

.....
 [1 mark]

(d) What is substance that used to store radioactive substance?
 Apakah bahan yang digunakan untuk menyimpan bahan radioaktif?

.....
 [1 mark]

(e) In Table 6, mark (✓) the effect of exposition of radioactive substance to human being.
 Di dalam Jadual 6, tandakan (✓) kesan pendedahan bahan radioaktif kepada manusia

Scurvi <i>Skurvi</i>	Mutation <i>Mutasi</i>	Canser <i>Kanser</i>	Anorexia nervosa <i>Anoreksia nervosa</i>

[1 mark]

Table 6
 Jadual 6

7 Diagram 7.1 shows the arrangement of apparatus to study the form of spectrum.
 Rajah 7.1 menunjukkan susunan radas untuk mengkaji pembentukan spektrum.

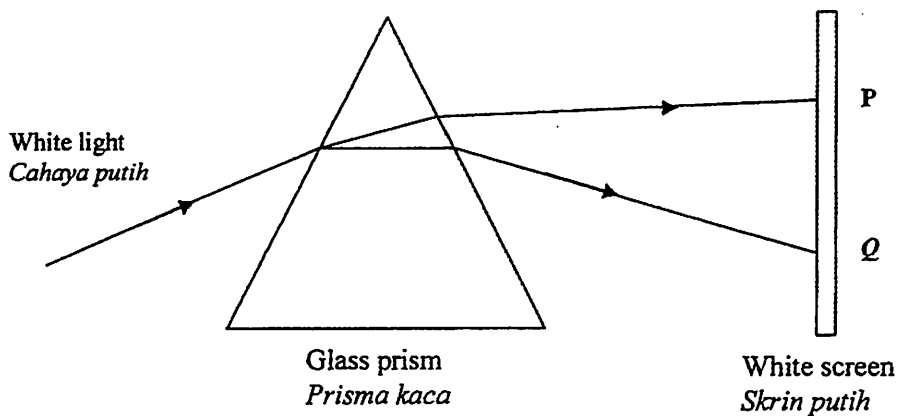


Diagram 7.1
 Rajah 7.1

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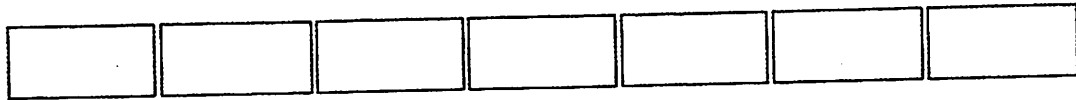
- (a) What happens to the white light when pass through glass prism?
Apakah yang berlaku pada cahaya putih apabila melalui prisma kaca?

..... [1 mark]

- (b) State a reason for your answer to (a)
Nyatakan satu sebab bagi jawapan anda di (a)

..... [1 mark]

- (c) Fill in the boxes below to show the arrangement of the colours formed in the spectrum from P to Q.
Lengkapkan kotak-kotak di bawah untuk menunjukkan susunan warna yang terbentuk dalam spektrum dari P ke Q.



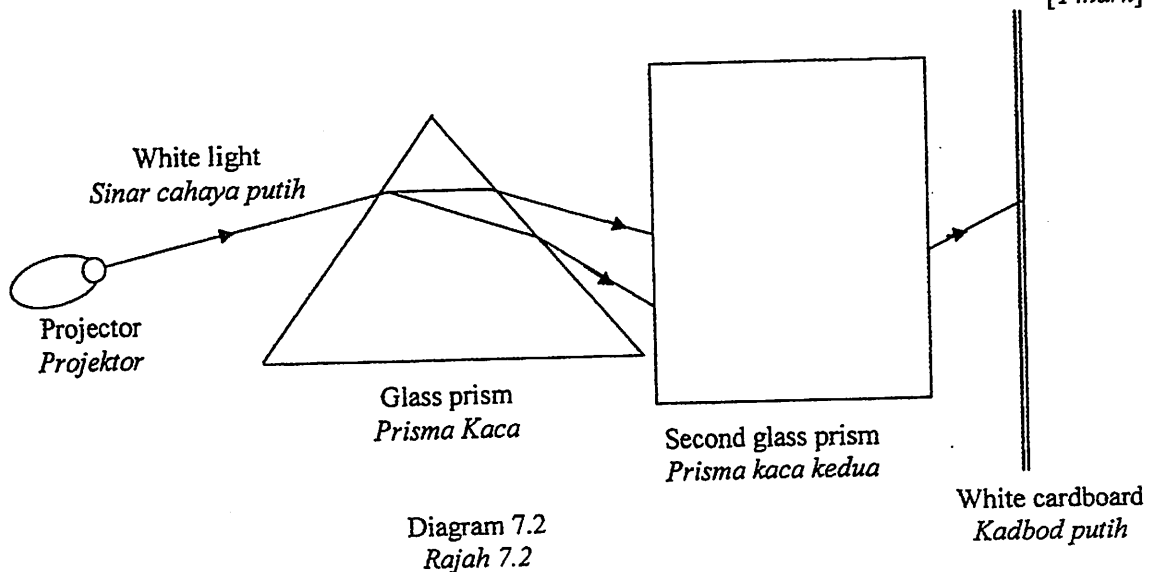
[2 marks]

- (d) Name a natural phenomenon where a spectrum can be seen.
Namakan fenomena semula jadi di mana spektrum boleh dilihat.

..... [1 mark]

- (e) In the box in Diagram 7.2, draw the position of the second glass prism to produce white light on the white cardboard.
Pada petak di Rajah 7.2, lukiskan kedudukan prisma kaca kedua bagi menghasilkan sinar putih pada kadbod putih.

[1 mark]



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8 Diagram 8.1 shows four different types of microorganisms
Rajah 8.1 menunjukkan empat jenis mikroorganisma.

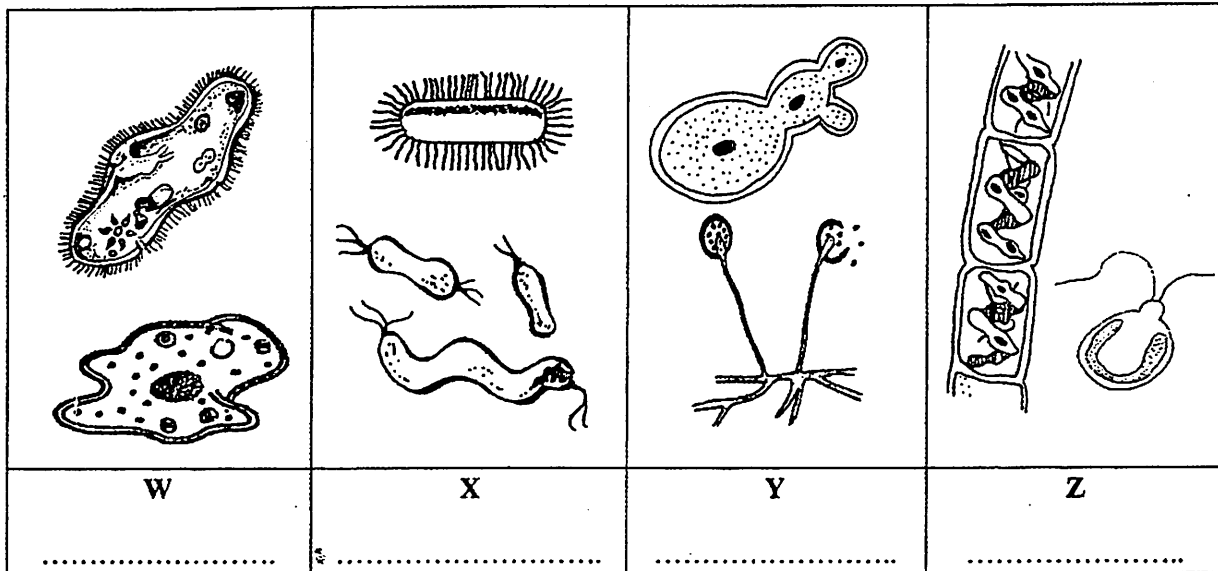


Diagram 8.1
Rajah 8.1

(a) Write down the types of microorganisms, W, X, Y, and Z in the boxes provided in Diagram 8.
Tulis jenis mikroorganisma, W, X, Y, dan Z dalam petak yang disediakan pada Rajah 8.1. [2 marks]

(b) Based on Diagram 8.1, which microorganisms can carry out photosynthesis?
Berdasarkan Rajah 8.1, mikroorganisma manakah yang boleh menjalankan proses fotosintesis?

..... [1 mark]

(c) State **another** shape of microorganism X and name the disease caused by it.
Nyatakan satu bentuk lain bagi mikroorganisma X dan namakan penyakit yang disebabkan nya

Shape :
Bentuk:

Disease :
Penyakit : [2 marks]

- (d) Diagram 8.2 shows the industry products which used microorganisms.
Rajah 8.2 menunjukkan bahan pengeluaran industri yang menggunakan mikroorganisma.



Diagram 8.2
Rajah 8.2

Which microorganism W, X, Y and Z is used to produce these products?
Antara mikroorganisma W, X, Y dan Z, yang manakah digunakan untuk menghasilkan makanan tersebut?

.....
 [1 mark]

- 9 Diagram 9 shows the thinning of layer A in the earth atmosphere.
Rajah 9 menunjukkan penipisan lapisan A yang berada di atmosfera bumi.

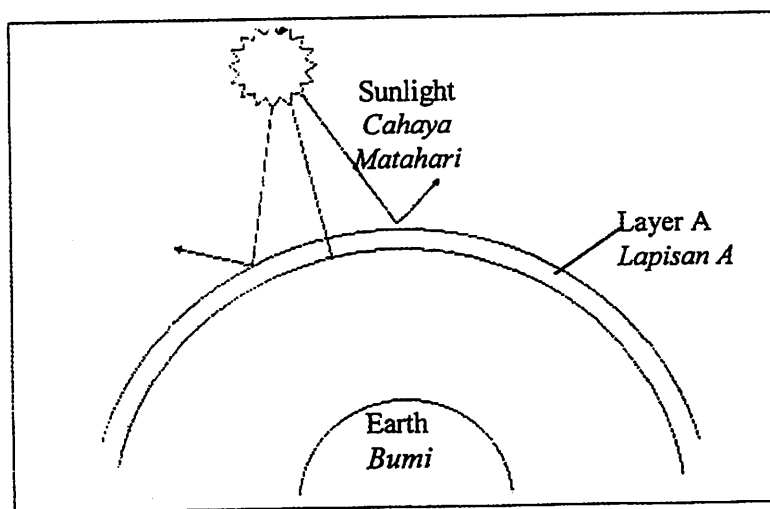


Diagram 9
Rajah 9

- (a) (i) Name layer A.
Namakan lapisan A

- (ii) What is the importance of layer A to Earth?
Apakah kepentingan lapisan A terhadap bumi?

.....
 [2 marks]

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- (b) How does the thinning of layer A could occur?
Bagaimanakah penipisan lapisan A boleh berlaku ?

.....
[1 mark]

- (c) State one bad effect on human being caused by the thinning of layer A.
Nyatakan satu kesan buruk kepada manusia akibat penipisan lapisan A itu.

.....
[1 mark]

- (d) How does the thinning of layer A affect the food chain of sea habitat?
Mengapakah penipisan lapisan A boleh menjejaskan rantai makanan habitat laut ?

.....
[1 mark]

- (e) State one effort that could be done by the world population in overcome the thinning of layer A.
Nyatakan satu usaha yang boleh diambil oleh penduduk dunia untuk mengatasi masalah penipisan lapisan A itu.

.....
[1 mark]

Section C

[20 marks/ 20 markah]

Answer Question 10 and either Question 11 or Question 12.

Write your answers on pages 17 - 19

*Jawab Soalan 10 dan mana-mana satu daripada Soalan 11 atau Soalan 12.**Tuliskan jawapan anda di halaman 17-19*

- 10 Study the following statement;
Kaji pernyataan berikut :

A plant needs complete nutrient for normal growth
Tumbuhan memerlukan nutrien yang lengkap untuk pertumbuhan normal

You are given Knop's solution, culture solution without nitrogen, a maize seedling, sterilised cotton wool, table lamp, black paper and other apparatus.

Anda diberikan larutan kultur Knop lengkap, larutan kultur tanpa nitrogen, anak benih jagung, kapas steril, lampu meja, kertas hitam dan radas lain.

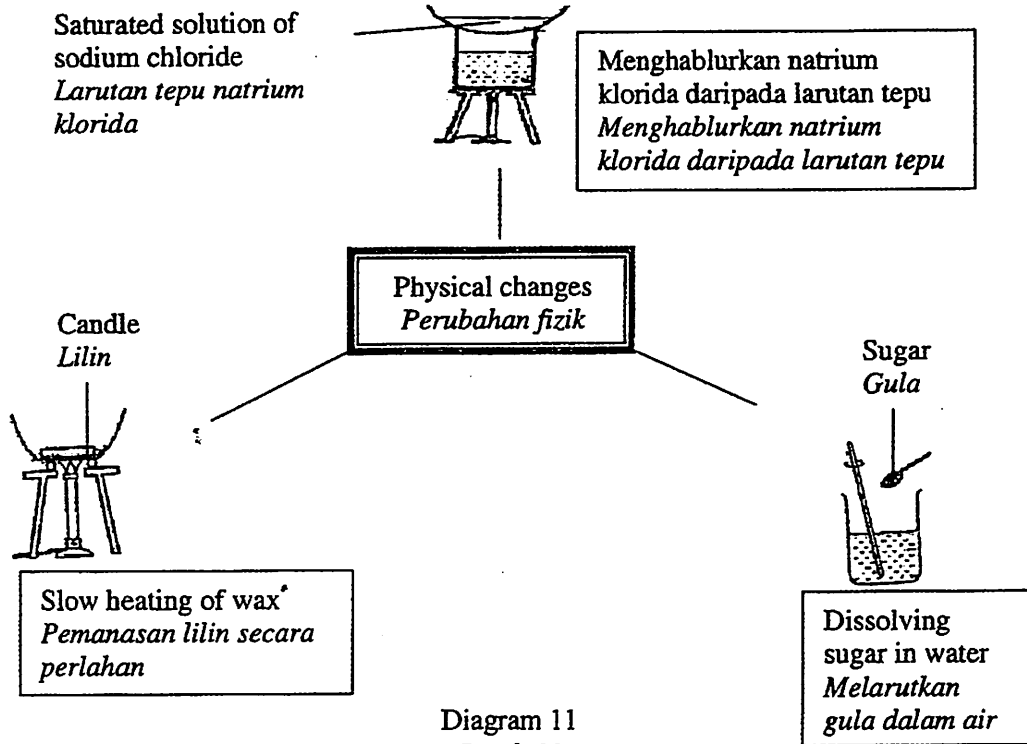
- (a) Suggest one hypothesis to investigate the above statement.
Cadangkan satu hipotesis yang sesuai untuk menyiasat pernyataan di atas. [1 mark]
- (b) Describe one experiment to test your hypothesis in 10(a) based on the following criteria:
Huraikan satu eksperimen untuk menguji hipotesis di 10(a) 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]

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- 11 (a) State four differences between physical changes and chemical changes.
Nyatakan empat perbezaan antara perubahan fizik dan perubahan kimia.

[4 marks]

- (b) Diagram 11 shows the examples of physical changes.
Rajah 11 menunjukkan contoh-contoh perubahan fizik.



Based on the above information, construct the concept of physical changes.
Berdasarkan maklumat di atas, binakan konsep perubahan fizik.

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

- Identify two common characteristic
Kenalpasti dua ciri seponya [2 marks]
- Give one other example of physical changes.
Berikan satu contoh lain bagi perubahan fizik. [1 mark]
- Give two non-example of physical changes.
Berikan dua bukan contoh perubahan fizik. [2 marks]
- Relate the common characteristics to construct the concept of physical changes.
Hubungkaitkan ciri seponya untuk membina konsep perubahan fizik. [1 mark]

- 12 (a) State two sources of water pollution and two effects on the environment
Nyatakan dua punca pencemaran air dan dua kesan terhadap persekitaran

[4 marks]

- (b) The Environmental Department had received a complaint from Kampung Indah's residents regarding to variety species of fishes found floating dead in the river. The result of the investigation made on the sample taken from the river proves that the river was contaminated with effluents from the nearby palm oil factory.

Explain three methods that could be done by the factory management in order to eliminate the effluents produced. Your explanation should base on the following aspect:

Jabatan Alam Sekitar telah menerima aduan daripada penduduk Kampung Indah tentang pelbagai spesis ikan telah ditemui mati terapung di dalam sungai. Setelah sampel air sungai tersebut diambil untuk dikaji, bukti menunjukkan sungai tersebut telah dicemari oleh sisa-sisa daripada kilang minyak kelapa sawit yang berhampiran.

Terangkan tiga kaedah yang boleh dilakukan oleh pihak pengurusan kilang tersebut dalam menghapuskan sisa-sisa yang terhasil. Penerangan anda mestilah mengandungi aspek-aspek berikut:

- Identify the problem.

Mengenalpasti masalah

[1 mark]

- Explain three alternatives to conserve the river

Terang tiga alternatif bagi memulihara sungai tersebut

[3 marks]

- List three alternatives according to their priority

Senarai tiga alternatif mengikut keutamaan

[1 mark]

- Choose the best alternative and state the reason for your choice

Pilih alternatif terbaik dan nyatakan sebab pilihan anda

[1 mark]

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

[Lihat sebelah
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