

# KOLEKSI SOALAN PEPERIKSAAN SAINS PMR

NAMA: .....

TINGKATAN: .....

3. Diagram 3 shows the cross section of human skin.

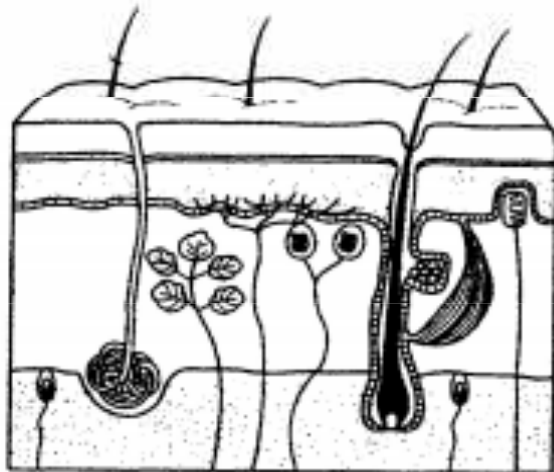


Diagram 3

(a) On Diagram 3, label the receptors using the following words

Touch receptor      Cold receptor      Pressure receptor

[3 marks]

(b) Which receptor is stimulated when the patient receives an injection?

.....  
[1 mark]

(c) Give two reasons why the arm is picked by the doctor to give injection.

(i) .....  
(ii) .....  
[2 marks]

(d) State the type of receptors largely used by blind people?

.....  
[1 mark]

1. Figure 1 shows the cross section of human skin.

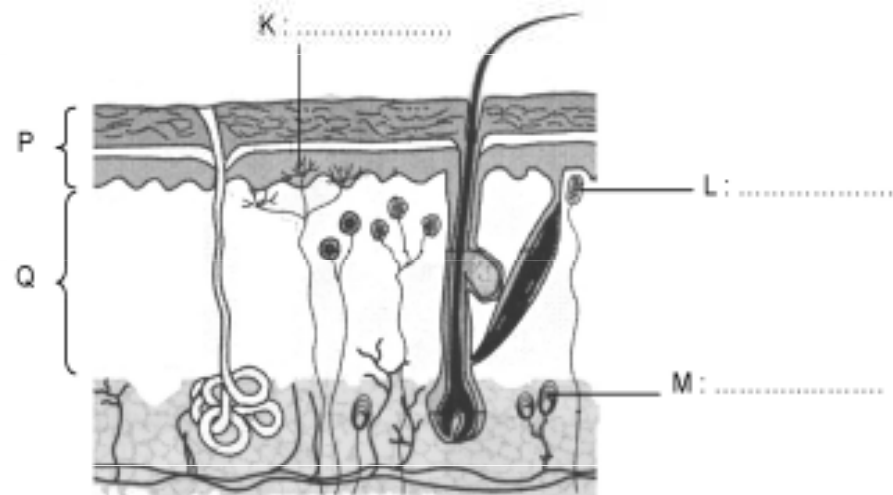


Figure 1

(a) On figure 1, label **three** structures using the following words:

pain receptor      pressure receptor      touch receptor

[3 marks]

(b) Draw lines to show the correct match between the skin layer and its characteristic.

**Skin layer**

**Characteristic**

P

Contains receptors, blood capillaries and sweat glands

Q

Made up of fat cells

Made up of dead cells

2  
[2 marks]

1. Diagram 1 shows the structure of the human ear.  
Rajah 1 menunjukkan struktur telinga manusia.

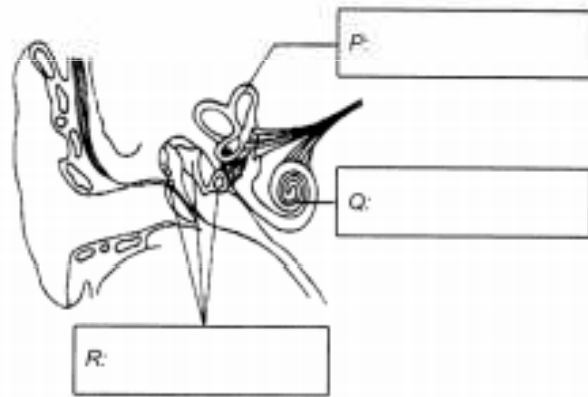


Diagram 1  
Rajah 1

- (a) On Diagram 1, label structures **P**, **Q** and **R** using the following words.  
Dengan menggunakan perkataan di bawah, labelkan struktur **P**, **Q** dan **R** pada Rajah 1

Semicircular canal Salur separa bulat	Cochlea Koklea	Ear ossicles Tulang osikel
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[3 marks]

- (b) Draw lines to match each structure with its functions.  
Lukis garisan untuk memadankan setiap struktur dengan fungsi masing-masing.

Structure Struktur	Function Fungsi
Q	Amplifies sound waves Menguatkan gelombang bunyi
R	Controls the balance of the body Mengawal keseimbangan badan
	Convert sound vibration to nerve impulses Menukarkan getaran bunyi kepada impuls saraf

[2 marks]  
[2 markah]

- (c) State **one** of the devices to overcome the defect of hearing.  
Nyatakan **satru** alat yang digunakan untuk mengatasi kecacatan pendengaran.

.....  
[1 mark]  
[1 markah]

1. Diagram 1 shows the cross section of the human ear.

Rajah 1 menunjukkan keratan rentas telinga manusia.

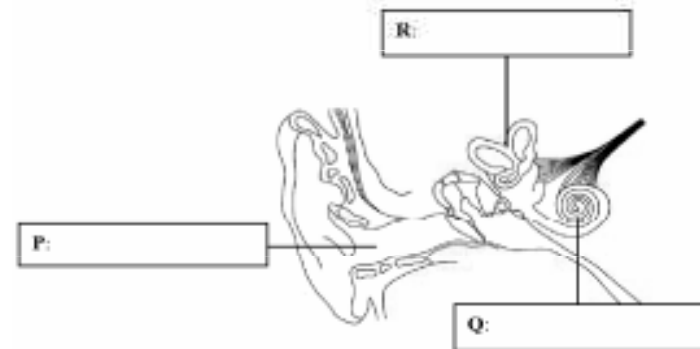


Diagram 1  
Rajah 1

- (a) On Diagram 1, label parts **P**, **Q** and **R** using the following words.

cochlea	semicircular canal	auditory canal
---------	--------------------	----------------

[3 marks]

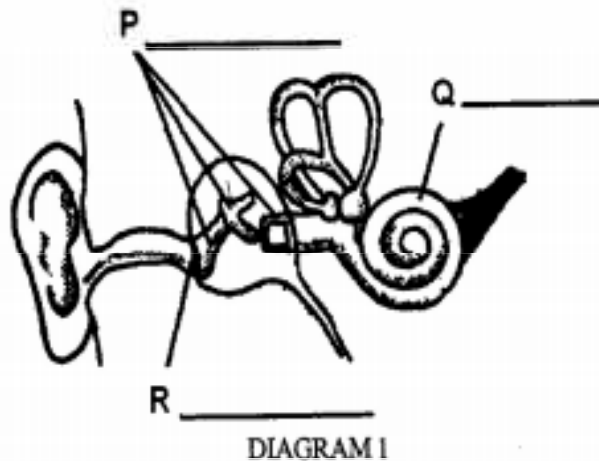
- (b) Draw lines to match the structure **P**, **Q** and **R** with its function.

Lukis garisan untuk memadankan struktur **P**, **Q** dan **R** dengan fungsinya.

Structure Struktur	Function Fungsi
P	Transmits sound waves to the eardrum Menghantar gelombang bunyi ke gegendang telinga
Q	Detects and changes sound vibrations into impulses Mengesan dan mengubah getaran bunyi kepada impuls
R	Collects and directs sound waves into auditory canal Mengumpul dan mengarahkan gelombang bunyi ke salur auditori
	Helps to balance the body Membantu mengimbangi badan

[3 marks]

Diagram 1 shows the structure of the human ear.



(a) Label the parts P, Q and R in Diagram 1 using the following words.

Ossicles	Cochlea	Eardrum
----------	---------	---------

(3 marks)

(b) State the function of Q.

.....  
(1 mark)

(c) The following sequence shows the path of the hearing mechanism.

Oval window	→	Cochlea	→	X	→	Brain
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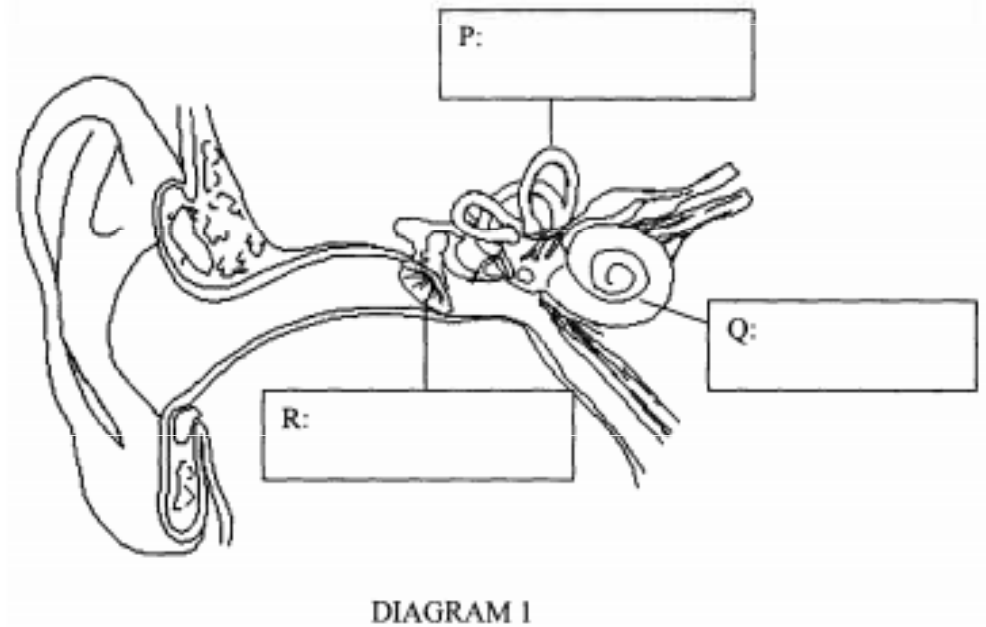
Mark the position of X in Diagram 1.

(1 mark)

(d) Name the structure of the ear, which helps in balancing the body

.....  
(1 mark)

Diagram 1 shows the structure of the human ear.



(a) On Diagram 1, label the structures P, Q and R using the following words.

Ear drum	Semicircular canal	Cochlea
----------	--------------------	---------

[3 marks]

(b) State the function of any **two** of the structures in 1(a).

.....  
.....

(1 mark)



3. Figure 3.1 shows a cross section of a human's ear..

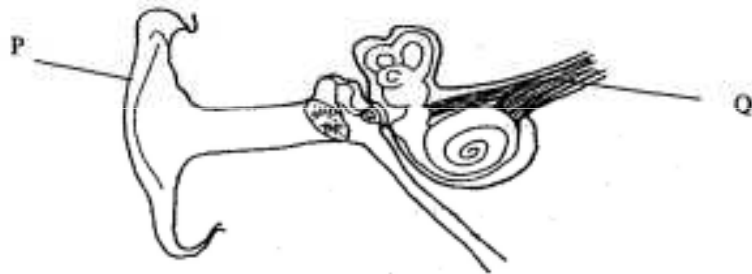


FIGURE 3.1

a) Label Figure 3.1 using the following words:

Eardrum	Cochlea
---------	---------

[ 2 marks ]

b) State the function of P and Q.

P : .....

Q : .....

[ 2 marks ]



FIGURE 3.2

Name the parts in human's ear that involved in the activity shown in Figure 3.2

i) .....

ii) .....

[ 2 marks ]

1 Diagram 1 shows the cross section of the human ear  
Rajah 1 menunjukkan keratan rentas telinga manusia

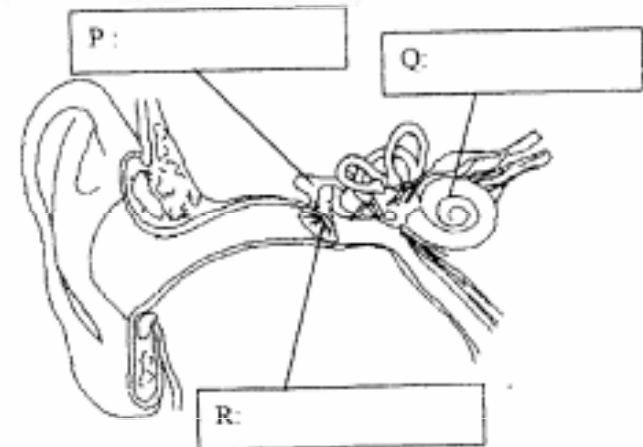


Diagram 1

Rajah 1

(a) On Diagram 1, label the structures using the following words.  
Pada rajah 1, labelkan bahagian-bahagian dengan perkataan berikut

Ear drum	Cochlea	Ear canal	Ossicles
Gendang telinga	Koklea	salur telinga	Osikel

[ 3 marks ]

(b) State **one** function for any **two** structures labeled on Diagram 1.  
Nyatakan **satu** fungsi bagi mana-mana **dua** bahagian yang berlabel dalam Rajah 1.

(i) .....

(ii) .....

[ 2 marks ]

1 Figure 1 shows the cross section of the human ear.

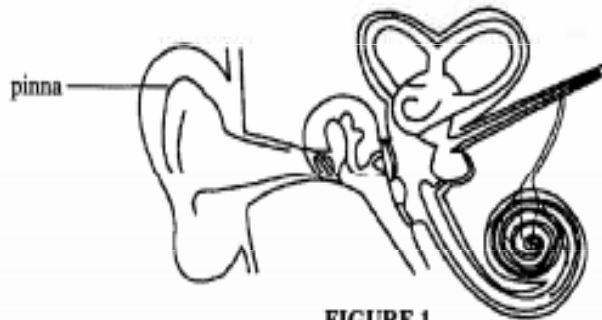


FIGURE 1

a) Label **two** of the following structures in Figure 1.

Cochlea    Eardrum    Oval window

[2 marks]

b) X sends the nerve impulses to the brain. Label the X in Figure 1.

[1 mark]

c) Draw lines to show the correct match between the structures and their functions. Draw the lines as shown.

Structure	Function
Ossicles	Converts the sound waves into nerve impulses.
Eardrum	Magnifying vibrations
Cochlea	Helps the body maintain its balance.
	Vibrates according to the frequency of the sound waves.

[2 marks]

Diagram 1 shows the structure of the human ear.  
Rajah 1 menunjukkan struktur telinga manusia.

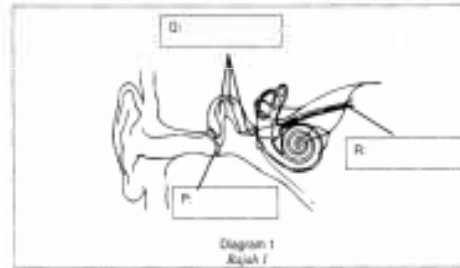


Diagram 1  
Rajah 1

ii) Label P, Q and R in Diagram 1 with the following words.  
Label P, Q dan R di Rajah 1 dengan perkataan berikut.

Ossicles Osikel	Auditory nerve Saraf auditori	Ear drum Gegendang telinga
[3 marks] [3 markah]		

iii) Structure S helps in maintaining body balance. Label S in Diagram 1.  
Struktur S membantu keseimbangan badan. Label S di Rajah 1.

[1 mark]  
[1 markah]

(c) Draw lines to match each structure with its functions.  
Lukis garisan untuk memadankan setiap struktur dengan fungsi masing-masing.

Structure Struktur	Function Fungsi
-----------------------	--------------------

P	<input type="radio"/> Vibrates when it is hit by sound waves Bergetar apabila dipukul oleh gelombang bunyi
Q	<input type="radio"/> Amplifies sound vibrations Menguatkan getaran bunyi
R	<input type="radio"/> Sends impulses to the brain Menghantar impuls ke otak
	<input type="radio"/> Changes sound vibrations into impulses Menukarkan getaran bunyi kepada impuls

[2 marks]  
[2 markah]

TERENGGANU 07 → Question 1

Diagram 1.1 shows the cross section of a human eye.  
Rajah 1.1 menunjukkan keratan rentas mata manusia.



DIAGRAM 1.1  
RAJAH 1.1

On Diagram 1.1, label structures K and M using the word in Table 1.2.  
Pada Rajah 1.1, labelkan struktur K dan M menggunakan perkataan dalam Jadual 1.2

Lens Kanta	Retina Retina	Pupil Anak mata
---------------	------------------	--------------------

TABLE / JADUAL 1.2

- b) Complete Diagram 1.3 using the words in Table 1.2 to show how light enters into the eye.  
Lengkapkan Rajah 1.3 dengan menggunakan perkataan dalam Jadual 1.2 untuk menunjukkan bagaimana cahaya memasuki mata.

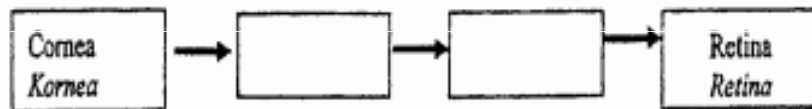


DIAGRAM 1.3 [2 marks]  
RAJAH 1.3

- c) Draw one line to show the correct match between the structures and its function.  
Lukiskan satu garisan untuk menunjukkan padanan yang betul antara struktur dan fungsi

Structures  
Struktur

Functions  
Fungsi

M

Receives light stimulus and sends impulses to brain  
Menerima rangsangan cahaya dan menghantar impuls ke

K

Focuses light  
Memfokuskan cahaya

[2 marks]

KEDAH 06 → Question 1

1. Diagram 1.1 shows the cross section of a human eye.

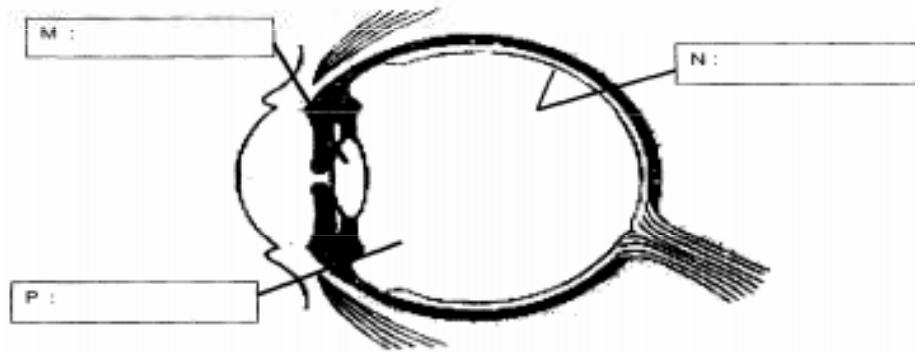


Diagram 1.1

- (a) Label the following structures in Diagram 1.1

Lens	Retina	Vitreous Humour
------	--------	-----------------

[3 marks]

- (b) Draw lines to show the correct match between the structures with their functions.

Draw the lines as shown below.

Structure

Function

M

send nerve impulses to the brain.

N

formed image

P

maintain the shape of eyeball

focuses the light onto the retina

2 marks

KEDAH 07 → Question 4

Diagram 4.1 shows the structure of human eye.

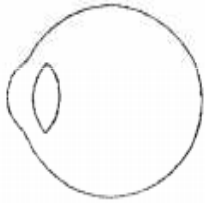


DIAGRAM 4.1

(a) (i) Draw the pathway of light rays of normal sightedness in Diagram 4.1

[2 marks]

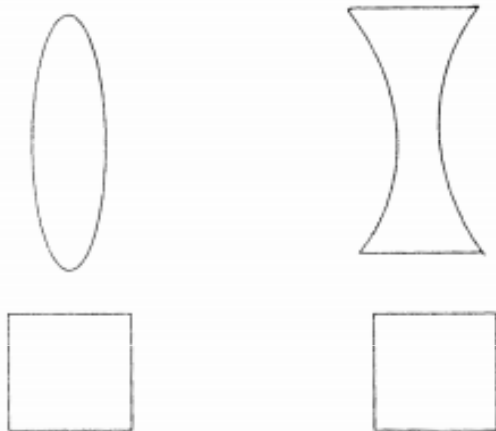
(ii) Name the part of the eye on which the image is formed.

[1 mark]

(ii). Give **one** reason that cause the defect in Z.

(iii). What type of lens is used to correct the defect in Y?

Choose your answer by mark with (✓) in the box below.



1 mark

(b). Diagram 4.2 shows the defect of vision.

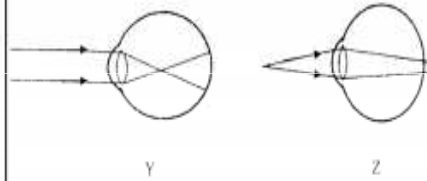


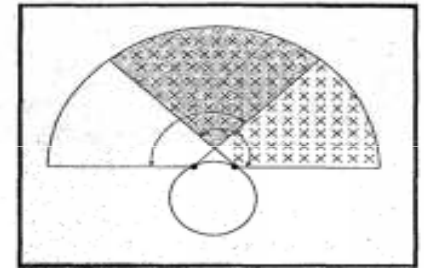
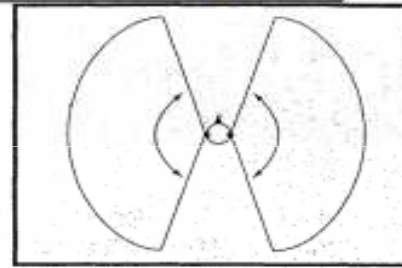
DIAGRAM 4.2

(i). Name the types of defects in:

Y: \_\_\_\_\_

Z: \_\_\_\_\_

KLANG 07 → Question 5



X: \_\_\_\_\_ Y: \_\_\_\_\_

FIGURE 5.1

(a) On Figure 5.1, label type of vision for X and Y.

[2 marks]

(b) How are the eyes of the animal positioned in vision X and Y?

X: \_\_\_\_\_

Y: \_\_\_\_\_

[2 marks]

(c) State **one** advantage of having:

(i) Vision X.

\_\_\_\_\_

(ii) Vision Y.

\_\_\_\_\_

[2 marks]

(d) Figure 5.2 shows pictures of several animals.

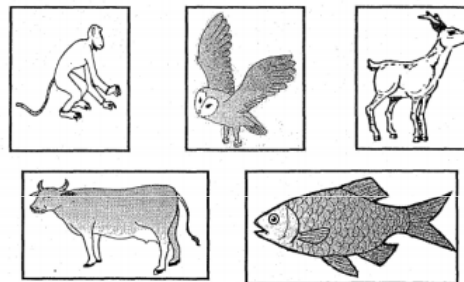


FIGURE 5.2

Based on the pictures, complete the table below by writing the name of animals and state whether they have vision X or Y.

Name of Animal	Type of Vision
Deer	Vision X
	8

[2 marks]

3. Diagram 3 shows an apparatus to study the response of plant towards external stimuli.

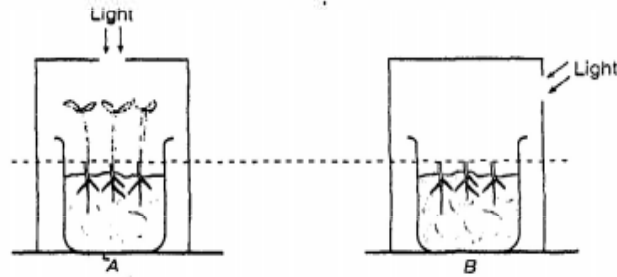


Diagram 3

(a) The two sets of apparatus were placed under the sun for three days.  
Draw the direction of growth of the seedling after three days in Figure 3 (B).  
[ 1 mark ]

(b) Based on your answer, what stimulus determines the response of the seedlings in the above diagram?

\_\_\_\_\_ [ 1 mark ]

(c) Which part of plant responds to the stimulus?

\_\_\_\_\_ [ 1 mark ]

(d) Explain how the type of response of plants in (b) is important to plants.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [ 2 marks ]

6 Diagram 6 shows the response of seedlings towards stimuli.

Rajah 6 menunjukkan gerak balas anak benih terhadap rangsangan.

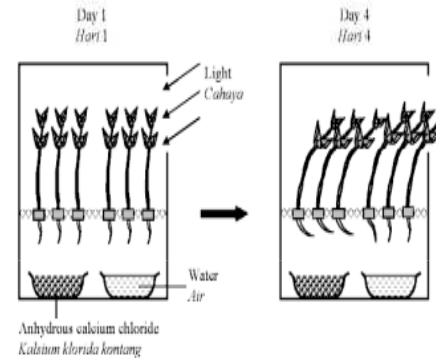


Diagram 6

(a) (i) Name one of the responses shown in Diagram 6.  
Namakan satu gerak balas yang ditunjukkan di dalam Rajah 6.  
..... [1 mark ]  
[1 markah ]

(ii) State the importance of the response you mentioned in 6(a)(i).  
Nyatakan kepentingan gerak balas yang di sebutkan dalam 6(a)(i).  
..... [1 mark ]  
[1 markah ]

(b) What are the effects of using the following substances?

Apakah kesan penggunaan bahan-bahan berikut?

(i) Anhydrous calcium chloride  
Kalsium klorida kontang

..... [1 mark ]  
[1 markah ]

(c)(i) Besides water, name another stimuli that helps the root to grow into the ground.  
Selain air, namakan rangsangan lain yang menolong akar tumbuh ke dalam tanah.

..... [1 mark ]  
[1 markah ]

(ii) Name the type of response mentioned in 6 (c)(i).  
Namakan jenis gerak balas yang disebutkan di 6 (c)(i).

..... [1 mark ]  
[1 markah ]

(d) Plants absorb water from the ground. What is the main function of water?  
Tumbuhan menyerap air dari tanah. Apakah fungsi utama air?

..... [1 mark ]  
[1 markah ]



Diagram 3 shows the apparatus set-up to detect the presence of class of food.

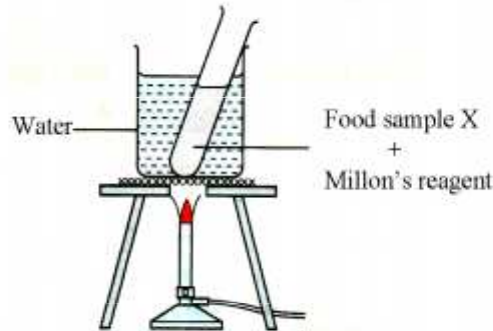


DIAGRAM 3

(a) (i) State the class of food that is tested in the above experiment.

.....  
[1 mark]

(ii) Give an example of food for (a)(i).

.....  
[1 mark]

(b) What can be observed happening to the mixture at the end of the experiment?

.....  
[1 mark]

(c) State **one** deficiency disease if a person consumes insufficient amount of the class of food in (a)(i).

.....

(d) (i) At which part of the human digestive system will this class of food start to be digested?

.....  
[1 mark]

(ii) Name the end product of digestion for this class of food.

.....  
[1 mark]

5. Diagram 5.1 shows the human digestive system. P, Q, R, S and T are the organs involved in the system

Rajah 5.1 menunjukkan sistem pencernaan manusia. P, Q, R, S dan T adalah organ-organ yang terlibat dalam sistem tersebut.

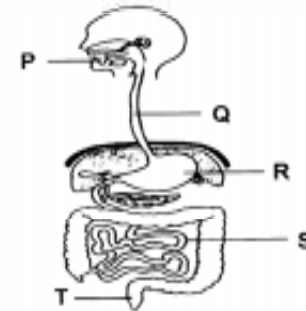
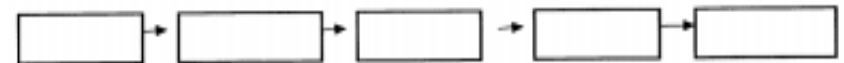


Diagram 5.1

Rajah 5.1

(a) Name the organs P, Q, R, S and T in the boxes given below to show the sequence in the human digestive system.

Namakan organ-organ P, Q, R, S dan T dalam kotak-kotak yang disediakan di bawah untuk menunjukkan urutan dalam sistem pencernaan manusia.



[2 marks]  
[2 markah]

(b) What is happening to the structure Q during the process of peristalsis?  
Apa akan berlaku kepada struktur Q semasa proses peristalsis?

.....  
[1 mark]  
[1 markah]

(c) What are the end products of carbohydrates, proteins and fats in the human digestive system?  
Apakah hasil akhir bagi karbohidrat, protein dan lemak dalam sistem pencernaan manusia?

(i) Carbohydrates  
Karbohidrat : .....

(ii) Proteins  
Protein : .....

(iii) Fats  
Lemak : .....

[3 marks]

(d) Diagram 5.2 shows an experiment to investigate the absorption of digested food.

Rajah 5.2 menunjukkan eksperimen untuk meniasat penyerapan makanan yang

K. LUMPUR 08 → Question 3

3. Diagram 3.1 shows an experiment to study the action of saliva on starch. The result of the experiment after 20 minutes is shown in Table 3.1  
*Rajah 3.1 di bawah menunjukkan satu eksperimen untuk mengkaji tindakbalas air liur ke atas kanji. Keputusan eksperimen selepas 20 minit ditunjukkan dalam Jadual 3.1*

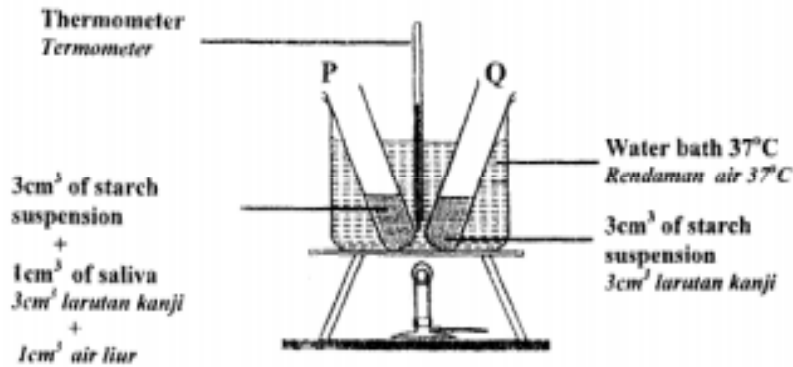


Diagram 3.1  
*Rajah 3.1*

Test tube <i>Tabung uji</i>	Presence of starch <i>Kehadiran kanji</i>
P	No ( <i>Tiada</i> )
Q	Yes ( <i>Ada</i> )

Table 3.1

Perak 08

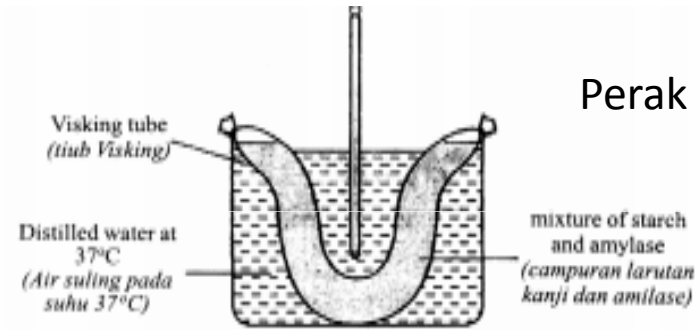


Diagram 5.2  
*Rajah 5.2*

(i) Which part in the experiment represents the small intestine?  
*Bahagian yang manakah dalam eksperimen mewakili usus kecil?*

[1 mark]  
 [1 markah]

(ii) Explain why the distilled water is kept at 37°C?  
*Jelaskan mengapa air suling berada pada suhu 37°C?*

Based on the Diagram 3.1 and Table 3.1 above answer the following questions.  
*Berdasarkan Rajah 3.1 dan Jadual 3.1 di atas jawab soalan berikut.*

1) (i) Why must test tubes P and Q be kept in the water bath at 37°C?  
*Mengapakah tabung uji P dan Q perlu diletakkan dalam rendaman air pada suhu 37°C?*

[1 mark/markah]

(ii) In which part of the human digestive system the same enzyme action occurs as in the test tube R?  
*Di bahagian manakah dalam sistem pencernaan manusia tindakbalas enzim berlaku seperti dalam tabung uji R?*

[1 mark/markah]

(iii) Name the gland that secretes saliva  
*Namakan kelenjar yang merembeskan air liur?*

[1 mark/markah]



5. Diagram 5.1 shows a human digestive system.  
(Rajah 5.1 menunjukkan sistem pencernaan manusia.)

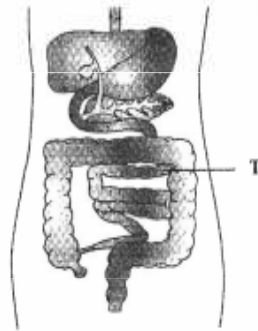


Diagram 5.1  
(Rajah 5.1)

a) Label **three** of the following structures in Diagram 5.1  
(Label **tiga** struktur berdasarkan Rajah 5.1)

Stomach (Perut)	Small intestine (Usus kecil)	Liver (Hati)	Large intestine (Usus besar)	Pancreas (Pankreas)
--------------------	---------------------------------	-----------------	---------------------------------	------------------------

[3marks]

b) State **one** function of organ T  
(Nyatakan **satu** fungsi organ T)

[1mark]

c) A student carried out a food test on sample M. Table 5.1 shows the results of the test.  
(Seorang pelajar menjalankan ujian makanan terhadap sampel M. Jadual 5.1 menunjukkan keputusan ujian tersebut.)

Food test (Ujian makanan)	Observation (Pemerhatian)	Food class (Kelas makanan)
Sample M is crushed and added with Millon's reagent (Sampel M dikacaukan dan ditambah dengan reagen milton)		Protein (Protein)
Sample M is added with a few drops of iodine solution. (Sampel M ditambahkan dengan beberapa titis larutan)		Starch (Kanji)

Complete Table 5.1 by writing the observation obtain from the food test.  
(Lengkapkan Jadual 5.1 dengan menulis pemerhatian yang diperolehi dari ujian makanan tersebut.)

[2marks]

d) Diagram 5.2 shows the sequence of food movement in digestive system.  
(Rajah 5.2 menunjukkan susunan pergerakan makanan di dalam sistem pencernaan.)



Diagram 5.2  
(Rajah 5.2)

What are represent by **B** and **G** in the sequence of food movement above?  
(Apakah yang diwakili oleh B dan G dalam pergerakan makanan di atas)

- i) **B** : \_\_\_\_\_  
ii) **G** : \_\_\_\_\_

[2marks]

3.

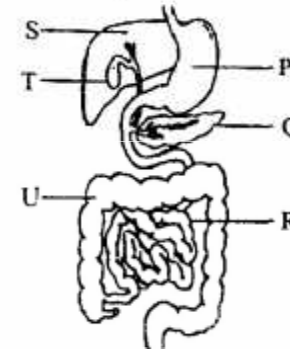


Figure 3

Figure 3 shows part of the human digestive system.

(a) Name the parts labelled P, Q, and R.

P : .....

Q : .....

R : .....

(3 marks)

(b) (i) Name the class of food which is digested in P.

.....  
(1 mark)

(ii) Which part of the human digestive system produces bile?

.....  
(1 mark)

(c) State the end products of digestion for the following classes of food.

Classes of food	End products of digestion
Carbohydrates	
Proteins	
Fats	

(3 marks)

(d) In which part of the alimentary canal is the end products of digestion absorbed?

.....  
(1 mark)

K. LUMPUR 08 → Question 3

3. Diagram 3.1 shows an experiment to study the action of saliva on starch. The result of the experiment after 20 minutes is shown in Table 3.1

Rajah 3.1 di bawah menunjukkan satu eksperimen untuk mengkaji tindakbalas air liur ke atas kanji. Keputusan eksperimen selepas 20 minit ditunjukkan dalam Jadual 3.1

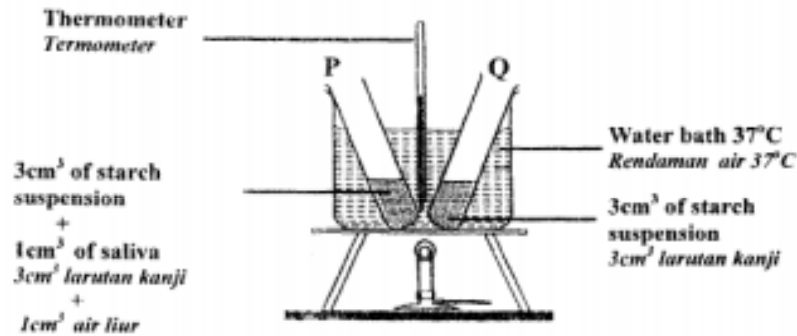


Diagram 3.1  
Rajah 3.1

Test tube Tabung uji	Presence of starch Kehadiran kanji
P	No (Tiada)
Q	Yes (Ada)

JADUAL 3.1

Based on the Diagram 3.1 and Table 3.1 above answer the following questions.  
berdasarkan Rajah 3.1 dan Jadual 3.1 di atas jawab soalan berikut.

- 1) (i) Why must test tubes P and Q be kept in the water bath at 37° C ?  
Mengapakah tabung uji P dan Q perlu diletakkan dalam rendaman air pada suhu 37°C ?

[ 1 mark/markah ]

- (ii) In which part of the human digestive system the same enzyme action occurs as in the test tube R?  
Di bahagian manakah dalam sistem pencernaan manusia tindakbalas enzim berlaku seperti dalam tabung uji R?

[ 1 mark/markah ]

- (iii) Name the gland that secretes saliva  
Namakan kelenjar yang merembeskan air liur?

[ 1 mark/markah ]

(b) Diagram 3.3 shows food classes and food samples.  
Rajah 3.3 menunjukkan kelas makanan dan contoh makanan.



Diagram 3.2  
Rajah 3.2

Complete Table 3.2 by writing the food classes and their food samples.  
Lengkapkan Jadual 3.2 dengan menulis kelas makanan dan contoh makanan tersebut.

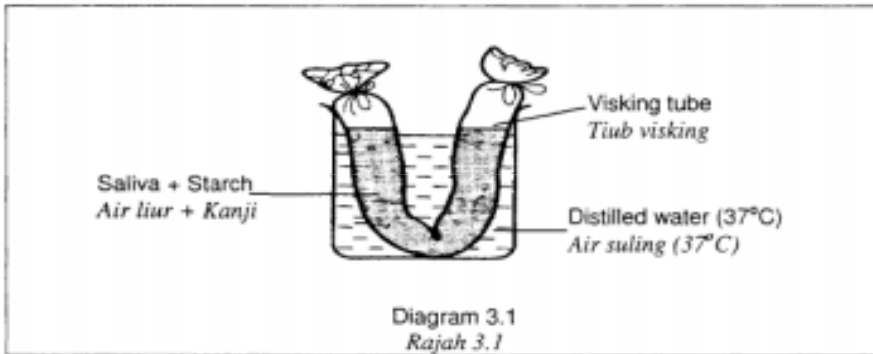
Food classes Kelas makanan	Food samples Contoh makanan
(i) Fat Lemak	Cooking oil, margarine Minyak masak, marjerin
(ii)	
(iii)	
(iv)	

Table 3.2  
Jadual 3.2

[3marks/3markah]

SELANGOR 08 → Question 3

Diagram 3.1 shows an experiment to test the absorption of digested food. After 10 minutes, the water in the beaker is tested.  
*Rajah 3.1 menunjukkan susunan radas bagi satu eksperimen. Selepas 10 minit, air dalam bikar diuji.*



- (i) What will diffuse through the visking tube?  
*Apakah yang meresap melalui tiub visking?*

[1 mark]  
 [1 markah]

- (ii) Suggest a reason for your answer in (a) (i).  
*Beri satu sebab bagi jawapan anda di (a) (i).*

[1 mark]  
 [1 markah]

- (iii) What will happen if the temperature of the distilled water is kept at 60 °C?  
*Apakah yang akan berlaku jika suhu air suling berada pada 60 °C?*

[1 mark]

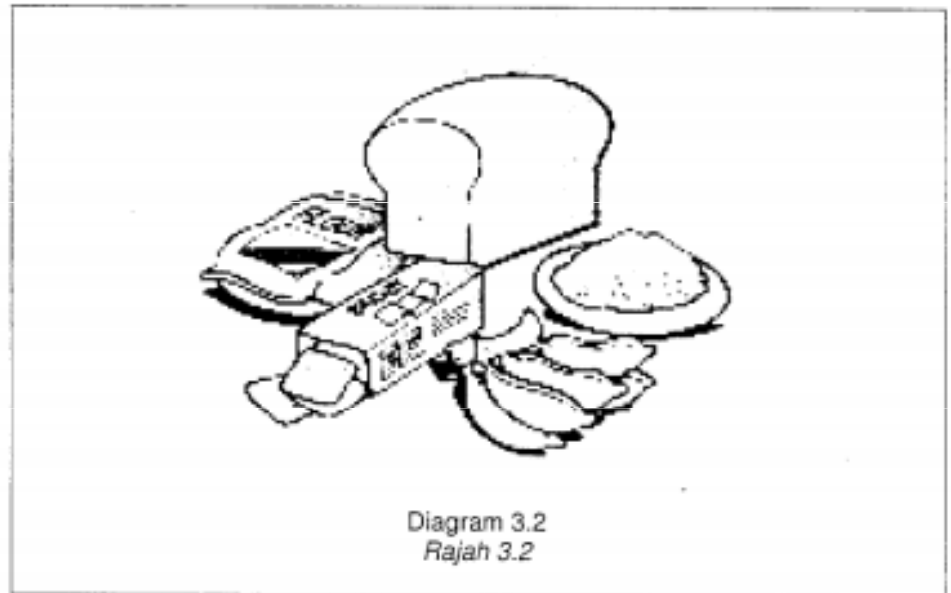
- (b) Name two solutions used to test the water in the beaker.  
*Namakan dua bahan uji yang digunakan untuk menguji air di dalam bikar?*

(i)

(ii)

[2 marks]  
 [2 markah]

- (c) Diagram 3.2 shows some examples from a certain class of food.  
*Rajah 3.2 menunjukkan beberapa contoh daripada sejenis kelas makanan.*



Name the class of food.  
*Namakan kelas makanan tersebut.*

[1 mark]  
 [1 markah]

Figure 5.1 shows the experiment to study the absorption of digested food. Food tests are carried out on the samples of distilled water. The results obtained were tabulated in the table below:

Rajah 5.1 menunjukkan eksperimen untuk mengkaji penyerapan makanan yang tercerna. Ujian makanan dilakukan ke atas sampel air suling.

Keputusan direkodkan dalam jadual di bawah:

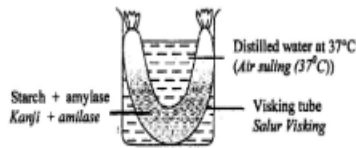


Figure 5.1

	Observation Pemerhatian	
	Iodine test Ujian Iodin	Benedict's solution test Ujian Benedict
Beginning Awal eksperimen	Brownish Perang	Blue Biru
After 20 min Selepas 20 min	Brownish Perang	Brick red precipitate Mendakan merah bata

a) Why should the temperature of the distilled water maintained at 37° C ?

Mengapa suhu air suling perlu dikekalkan pada 37° C ?

.....  
[1 mark]

b) State the purpose of using iodine.

Nyatakan tujuan menggunakan iodin.

.....  
[1 mark]

c) i) After 20 minutes, what substance is formed in the distilled water?

Selepas 20 minit, apakah bahan yang terhasil di dalam air suling?

.....  
[1 mark]

ii) Give a reason why the substance in b(i) can be found in the distilled water?

Beri satu sebab mengapa bahan di b(i) boleh didapati di dalam air suling?

.....

d) In the human body, the

Di dalam badan manusia,

i) visking tube is represented by : .....

Tiub visking diwakili oleh

[1 mark]

ii) distilled water is represented by : .....

Air suling diwakili oleh

[1 mark]

2 Diagram 2.1 shows the flow of energy in a simple food web.

Rajah 2.1 menunjukkan aliran tenaga dalam satu siratan makanan ringkas.

(a) (i) Which organism is the producer?

Organisma yang manakah ialah pengeluar?

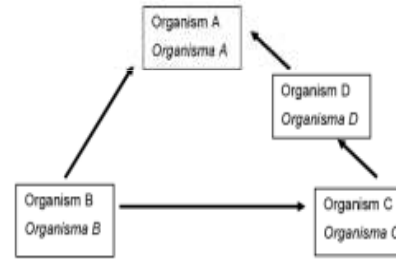


Diagram 2.1

[1 mark]  
[1 markah]

(ii) Why is the organism mentioned in 2(a)(i) called the producer?

Kenapa organisma yang disebut di 2(a)(i) dikenali sebagai pengeluar?

.....  
[1 mark]

(b) Diagram 2.2 shows a food web that consists of several interrelated food chains.

Rajah 2.2 menunjukkan satu siratan makanan yang mengandungi beberapa gabungan rantai makanan.

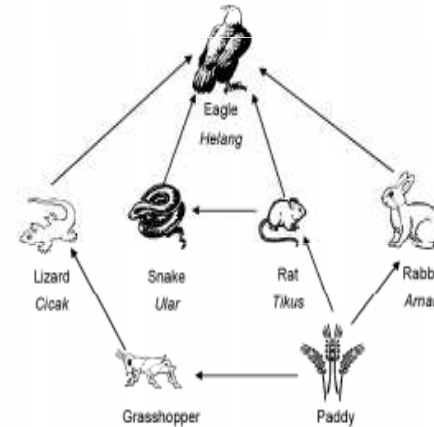


Diagram 2.2

Rajah 2.2

(c) What will happen if an extreme drought season wipes out most of the paddy plants?

Apa akan berlaku jika satu musim kemarau menghapuskan semua pokok padi?

.....  
[1 mark]  
[1 markah]

(d) Predict what will happen if the population of rats is suddenly increased.

Ramalkan apa akan berlaku jika populasi tikus bertambah dengan tiba-tiba.

.....

(e) What is the source of energy for the food chain and the food web?

Apakah sumber tenaga bagi rantai dan siratan makanan ini?

(i) How many food chains are there in the food web shown in Diagram 2.2?

Berapa rantai makanan yang terdapat dalam siratan makanan pada

Rajah 2.2?

.....  
[1 mark]  
[1 markah]

(ii) Give one example of food chain that you can find in the food web in Diagram 2.2.

Beri satu contoh rantai makanan yang terdapat dalam siratan makanan dalam Rajah 2.2.

.....  
[1 mark]



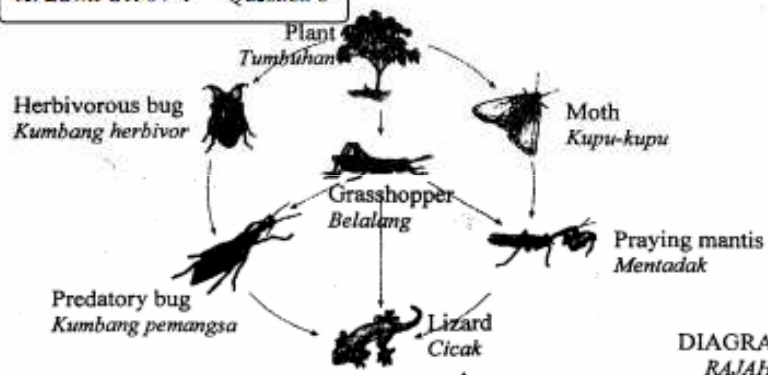


DIAGRAM 6.0  
RAJAH 6.0

6. Study the food web in Diagram 6.0.  
Kaji siratan makanan dalam Rajah 6.0.

(a) Construct two food chains with three or four links.  
Bina dua rantai makanan yang mengandungi tiga atau empat hubungan.

1. ....
2. ....

[2 marks/ markah]

(b) Name the main source of energy in the food web above.  
Namakan sumber tenaga utama dalam siratan makanan di atas.

.....

[1 marks/ markah]

(c) Name the tertiary consumer in the food web.  
Namakan pengguna ketiga dalam siratan makanan itu.

.....

[1 marks/ markah]

(d) State the interaction between grasshopper and lizard.  
Nyatakan hubungan antara belalang dengan cicak.

.....

[1 marks/ markah]

(e) Which organism removes carbon dioxide from the air?  
Organisma yang manakah menyingkirkan karbon dioksida daripada udara?

.....

[1 marks/ markah]

(f) Predict what happens when the plants in the food web die.  
Ramalkan apa yang akan berlaku apabila tumbuhan dalam siratan makanan mati.

.....

[1 marks/ markah]

Figure 3.1 shows the number of four type of organisms P,Q,R and S in a habitat

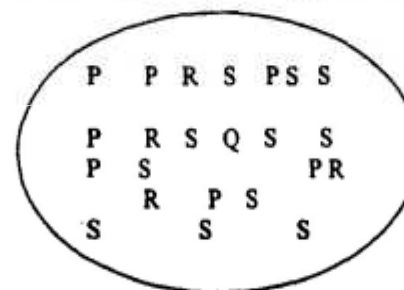


FIGURE 3.1

a) What is the meaning of 'community'?

.....  
(1 mark)

b) Based on Figure 3.1, complete the pyramid number below using the given letters.

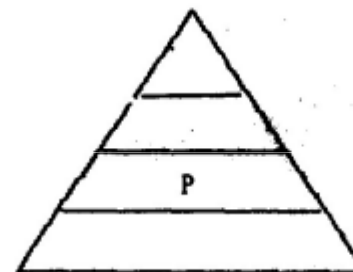


FIGURE 3.2

(2 marks)

c) Which group of organism are ( answer in letter) :

i) producer :.....

ii) Secondary consumer :.....

d) Energy flow decreases in ascending order of the number of pyramid. Explain

.....  
.....

Diagram 2 shows a pyramid number.

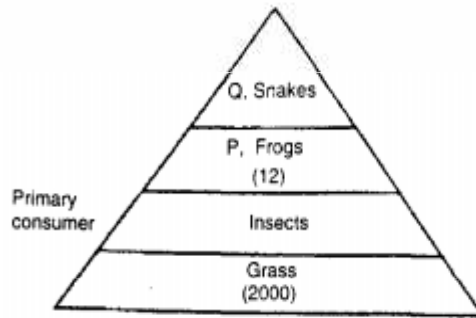


DIAGRAM 2

- (a) State the type of consumers represented by P and Q in Diagram 2. Choose the words from the box below

Producer	Secondary consumer	Tertiary consumer
----------	--------------------	-------------------

P : \_\_\_\_\_

Q : \_\_\_\_\_

[2 marks]

- (b) The estimated numbers of some of the organisms in the community are shown in Diagram 2.

Circle the number given in the box below to estimate the number of insects.

2050	200	3
------	-----	---

[1 mark]

- (c) What will happen if the grass is partly destroyed?

[1 mark]

- (d) (i) Why is the grass classified as producers?

[1 mark]

- (ii) Complete the food chain by naming another consumer, other than the frogs.

grass → insects →  → snake

[1 mark]

3. Diagram 3 shows pictures of a group of animals.

*Bilakah di bawah menunjukkan gambar rumpun haiwan:*

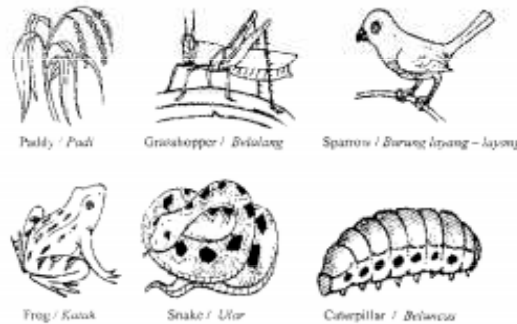


Diagram 3

- (a) Based on Diagram 3, construct a food web.

*Berdasarkan gambar dalam rajah 3, bina satu siratan makanan.*

- (b) From the food web you have constructed in 3 (a), state the:

- i. tertiary consumer : .....

[ 1 mark ]

- (c) i. Based on the food web which has been constructed in 3 (a), name one pest of paddy plant.

*Berdasarkan siratan makanan yang dibina di 3 (a), namakan satu organisma perosak kepada pokok padi.*

[ 1 mark ]

- ii. State one natural method which control the population of the pest ?

*Namakan satu kaedah untuk mengawal populasi organisma perosak secara semulajadi.*

[ 1 mark ]

- (d) What will happen to the population of frog if the population of the snake increases ?

*Apakah yang berlaku pada populasi katak jika populasi ular meningkat dengan cepat ?*

[ 1 mark ]

- (e) From the food web in 3 (a), give an example of animal in each of the following interaction.

*Berdasarkan siratan makanan di 3 (a), berikan contoh haiwan bagi interaksi berikut.*

- i. Competition : ..... 17

*Persaingan*

[ 1 mark ]

4. Figure 4 shows a Food web.

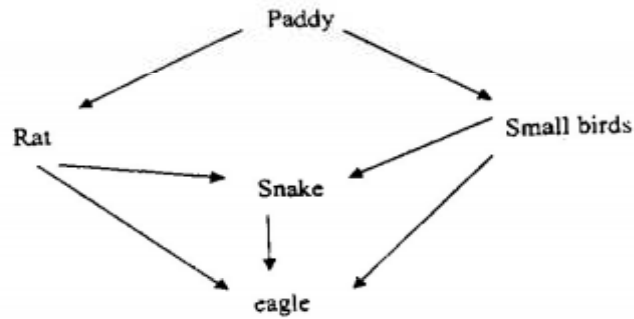


Figure 4

a) Based on figure 4, state one example of:-

- I. Primary Consumer : \_\_\_\_\_ (1 mark)
- II. Secondary Consumer : \_\_\_\_\_ (1 mark)
- III. Tertiary Consumer : \_\_\_\_\_ (1 mark)

b) Build a food chain from the food web above:

b) Build a food chain from the food web above:

\_\_\_\_\_ (1 mark)

c) What will happen if :

i) The population of rat increases \_\_\_\_\_ (1 mark)

ii) The population of eagle increases \_\_\_\_\_ (1 mark)

d) Give one example of pest found in the food web \_\_\_\_\_ (1 mark)

e) State one method to control pest without involving the environment.  
\_\_\_\_\_ (1 mark)

3. Diagram 3.1 shows a type of interaction.

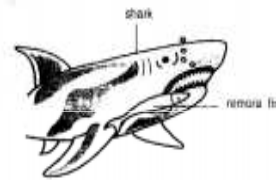


Diagram 3.1

a) Name the type of interaction between the organisms.

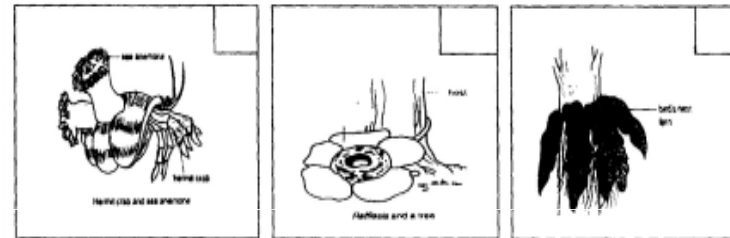
..... [ 1 mark ]

b) Based on the Diagram 3.1, state one characteristics of these interaction.

.....  
..... [ 1 mark ]

(c) Based on Diagram 3.2, choose one interaction that has the same interaction as Diagram 3.1.

Mark ( • ) in the box for the interaction.



[ 1 mark ]

Diagram 3.2

d) Diagram 3.3 shows an interaction between two organisms.



Diagram 3.3

i. On Diagram 3.3, state one usage of this interaction ?

..... [ 1 mark ]

ii. State two advantages based on your answer in (d)(i).

- 1. ....
- 2. ....



Diagram 4 shows a type of interaction among living organisms.  
Rajah 4 menunjukkan satu jenis interaksi di kalangan benda hidup.



Rafflesia and a tree  
Rafflesia dan sebatang pokok

Diagram 4.1

(a) Name the type of the interaction between the organisms.  
Namakan jenis interaksi di kalangan organisma-organisma tersebut.

[1 mark]

(b) Based on Diagram 4.1, state one disadvantage of this type of interaction.  
Berdasarkan Rajah 3.1, nyatakan satu keburukan interaksi jenis ini.

[1 mark]

(c) Based on Diagram 4.1, give one other example of the same type of interaction.  
Berdasarkan Rajah 4.1, berikan satu contoh lain interaksi jenis ini.

[1 mark]

(d) Diagram 4.2 shows another type of interaction between two organisms.  
Rajah 4.2 menunjukkan satu lagi jenis interaksi di antara dua organisma.



Diagram 4.2  
Rajah 4.2

(i) Based on Diagram 3.2, state one method of this interaction in agriculture.  
Berdasarkan Rajah 3.2, nyatakan satu kaedah interaksi ini dalam bidang pertanian.

[1 mark]

(ii) Give two advantages of the methods of the interaction in d(i).  
Berikan dua kebaikan kaedah interaksi dalam d(i)

1. \_\_\_\_\_

2. \_\_\_\_\_

[2 marks]

Figure 4.1 shows an experiment carried out by a group of students.

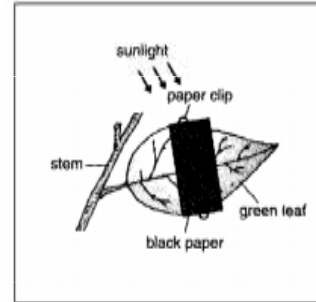


Figure 4.1

(a) (i) What is the aim of the experiment.

[1 mark]

(ii) Why is part of the leaf covered with black paper?

[1 mark]

(b) Figure 4.2 shows the steps taken to test the presence of starch in the leaf.

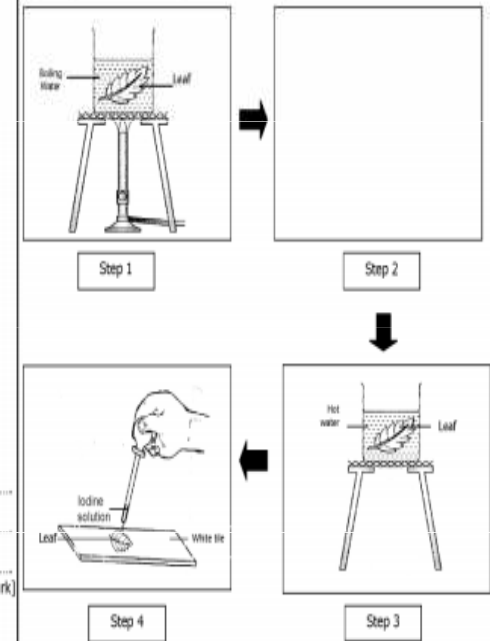


Figure 4.2

(i) Draw the set up of apparatus for step 2 in the space provided in Figure 4.2.

[2 marks]

(ii) What is the purpose of step 2?

.....

(c) Explain how photosynthesis helps to maintain a balanced ecosystem.

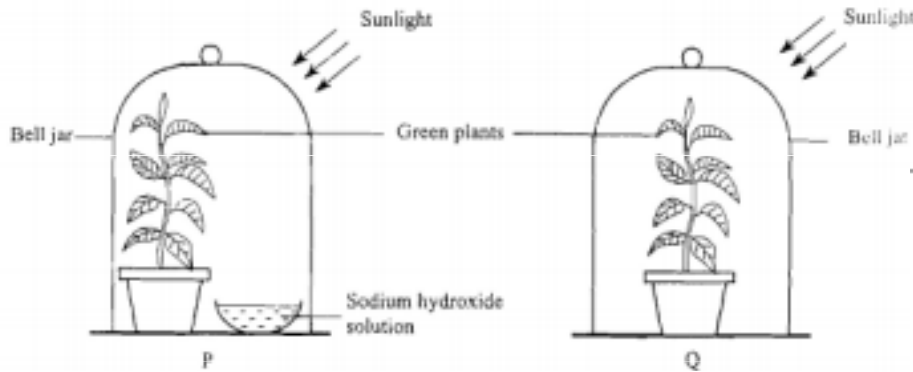
.....

.....

.....

KEDAH 08 → Question 5

5. Diagram 5.1 shows two potted plants P and Q placed under sunlight for a few hours. The plants have been kept in the dark for about 24 hours. A leaf is plucked from each plant and tested for the presence of starch. *Rajah 5.1 menunjukkan dua pokok berpasu, P dan Q diletakkan di bawah cahaya matahari selama beberapa jam. Sebelum itu, kedua-dua pokok berpasu ini diletakkan di dalam gelap selama 24 jam. Sehelai daun dipetik dari setiap pokok dan diuji untuk menunjukkan kehadiran kanji.*



(a) What is the function of sodium hydroxide solution?  
*Apakah fungsi larutan kalium hidroksida?*

.....  
.....  
[ 1 mark ]

(b) Why are these two potted plants kept in the dark for 24 hours?  
*Mengapakah kedua-dua pokok berpasu diletakkan di dalam gelap selama 24 jam?*

.....  
.....  
[ 1 mark ]

A few drops of iodine solution are dripped onto the leaves from plant P and plant Q as shown in Diagram 5.2. *Beberapa titis larutan iodine telah dititiskan ke atas daun dari pokok P dan pokok Q seperti di rajah 5.2.*

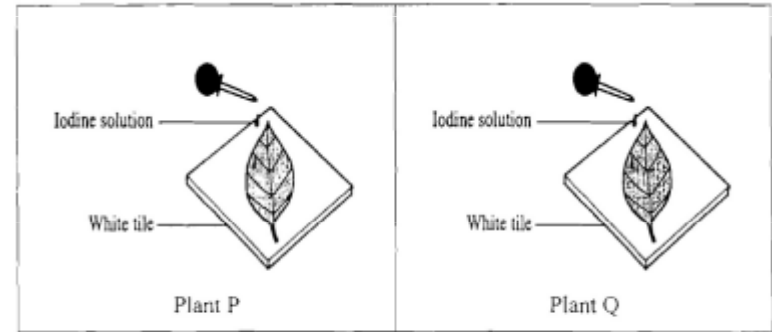


Diagram 5.2  
i. Which of the leaves will change to dark blue?  
*Daun manakah*

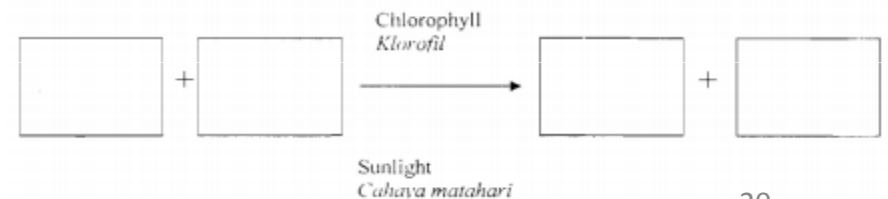
i. Which of the leaf will change to dark blue?  
*Daun manakah yang akan bertukar kepada biru gelap?*

.....  
[ 1 mark ]

ii. Explain your answer in c ( i ).  
*Terangkan jawapan anda di c ( i ).*

.....

(d) Complete the word equation for the process of photosynthesis.  
*Lengkapkan persamaan perkataan untuk proses fotosintesis.*



20  
[ 3 marks ]

Diagram 1 shows some examples of the method used to separate some matter.  
 Rajah 1 menunjukkan contoh-contoh kaedah yang digunakan untuk memisahkan jirim tertentu.

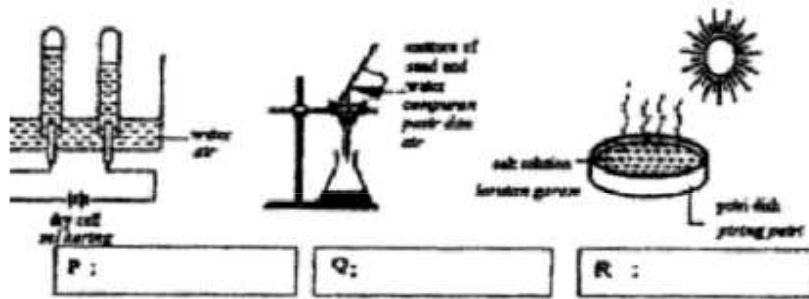


Diagram 1 / Rajah 1

(a) On Diagram 1, label the method of separation P, Q and R using following words.  
 Pada Rajah 1, label kaedah pengasingan bagi P, Q dan R menggunakan perkataan berikut.

Evaporation Pensejatan	Filtration Pensirisan	Electrolysis Elektrolisis
---------------------------	--------------------------	------------------------------

(b) Draw lines to show the correct match between the method of separation and their uses.  
 Lukiskan garisan untuk menunjukkan padanan yang betul antara kaedah pengasingan dan kegunaan masing-masing.

Separation method  
Kaedah Pengasingan

Uses  
Kegunaan

P

To separate an insoluble solid from liquid  
Mengasingkan bahan pepejal tak terlarut dari cecair

Q

To breakdown the compound into its elements  
Menguraikan sebatian kepada unsur-unsurnya

R

To separate a dissolved solid from a liquid  
Mengasingkan bahan pepejal terlarut dari cecair

[ 3 marks ]

3. Diagram 3.1 shows the physical changes in water.  
 Rajah 3.1 menunjukkan perubahan fizikal dalam air.

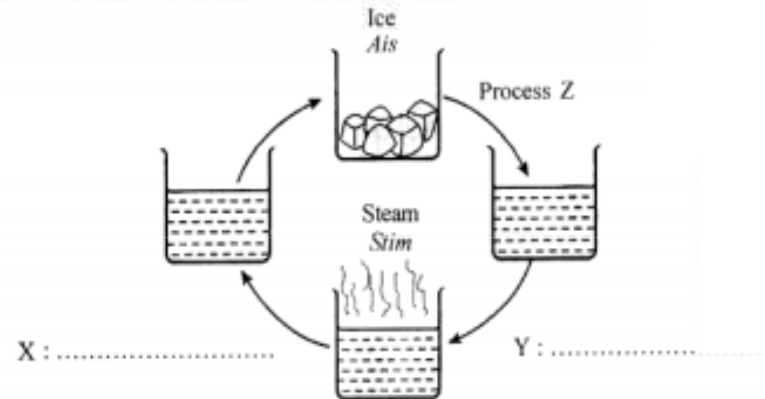


Diagram 3.1  
Rajah 3.1

(a) State the process X and the process Y on Diagram 3.1 to show the physical changes in state of matter for water using the following information.  
 Nyatakan proses X dan proses Y pada Rajah 3.1 untuk menunjukkan perubahan fizikal dalam keadaan jirim bagi air menggunakan maklumat berikut.

Freezing Pembekuan	Boiling Pendidihan	Condensation Kondensasi
-----------------------	-----------------------	----------------------------

[2 marks]

(b) (i) State one of the properties of pure water.  
 Nyatakan satu sifat air tulen.

[1 mark]

(ii) What is the effect of the impurities to the boiling point of water?  
 Apakah kesan benda asing di dalam air kepada takat didih air?

21

[1 mark]

- (c) (i) Diagram 3.2 shows the changes in the arrangement of particles of the water molecules from Situation A to Situation B after Process Z. Draw the arrangement of particles of the water molecules in Situation B in the box given.  
*Rajah 3.2 menunjukkan perubahan susunan zarah-zarah molekul air dari Situasi A kepada Situasi B. Lukis susunan zarah-zarah molekul air dalam situasi B di dalam kotak yang disediakan.*

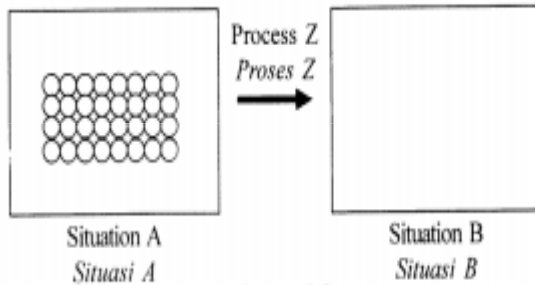


Diagram 3.2  
*Rajah 3.2*

melting

[1 mark]  
 [1 markah]

- (ii) State the difference between the particles in Situation A and Situation B in Diagram 3.2?  
*Nyatakan perbezaan di antara zarah-zarah dalam Situasi A dan Situasi B dalam Rajah 3.2?*

[1 mark]  
 [1 markah]

- (iii) State whether heat is absorbed or released during process Z.  
*Nyatakan sama ada haba diserap atau dibebaskan semasa proses Z.*

[1 mark]

- 6 Figure 6 shows an experiment on water purification that has been carried out.

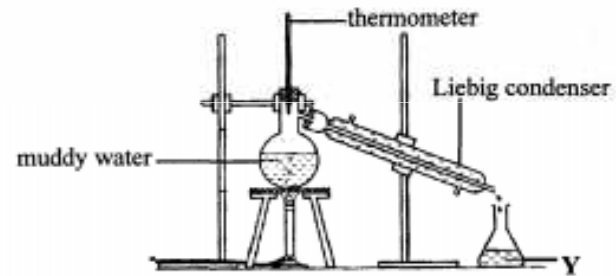


FIGURE 6

- (a) Name the above process.  
 \_\_\_\_\_  
 [1 mark]
- (b) On Figure 6, draw an arrow to show the direction of water coming in and water going out from the Liebig condenser.  
 \_\_\_\_\_  
 [1 mark]
- (c) What is the function of the Liebig condenser?  
 \_\_\_\_\_  
 [1 mark]
- (d) Name the process which occurs in the Liebig condenser.  
 \_\_\_\_\_  
 [1 mark]
- (e) Name the liquid Y.  
 \_\_\_\_\_  
 [1 mark]
- (f) Why is liquid Y not suitable for drinking?  
 \_\_\_\_\_  
 [1 mark]
- (g) State **one** difference between liquid Y and filtered water.  
 \_\_\_\_\_  
 [1 mark]
- (h) Give **two** changes in the state of matter in this activity.  
 (i) \_\_\_\_\_  
 (ii) \_\_\_\_\_  
 [2 marks]

5. Diagram 5.1 shows the percentage of gases J, K, L, M and N in the atmosphere.  
*Rajah 5.1 menunjukkan peratusan gas-gas K, L, M dan N dalam atmosfera.*

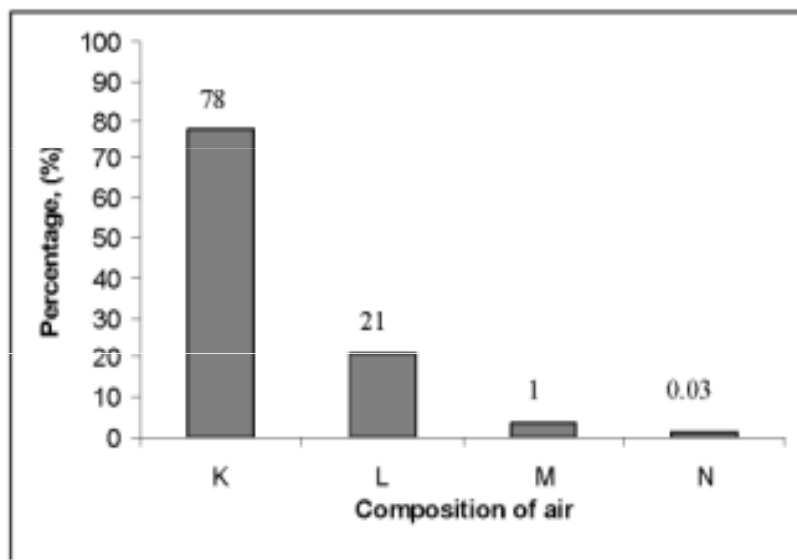


Diagram 5.1  
*Rajah 5.1*

- a) (i) Based on Diagram 5.1, complete Table 5.1.  
*Berdasarkan Rajah 5.1, lengkapkan Jadual 5.1.*

Name of gas L <i>Nama gas L</i>	Properties of gas L <i>Sifat gas L</i>
.....	.....
.....	.....

Table 5.1  
*Jadual 5.1*

[2 marks]

- (ii) Diagram 5.2 shows the set up of an experiment to study solubility of gases L and N in water.

*Rajah 5.2 menunjukkan susunan eksperimen untuk mengkaji keterlarutan gas L dan N dalam air.*

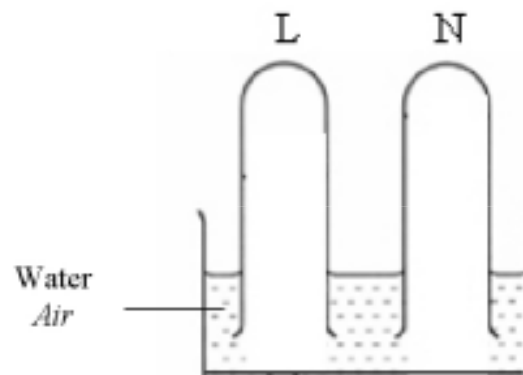


Diagram 5.2  
*Rajah 5.2*

Draw the level of water for each test tube in Diagram 5.2 to show the observation of this experiment.

*Lukis aras air bagi setiap tabung uji dalam Rajah 5.2 bagi menunjukkan pemerhatian eksperimen ini.*

[1 mark]  
 [1 markah]

- (iii) State the test for gas N?  
*Nyatakan ujian untuk gas N?*

.....

[1 mark]



b) Diagram 5.3 shows the burning of charcoal in the present of gas L.  
*Rajah 5.3 menunjukkan pembakaran arang dengan kehadiran gas L.*

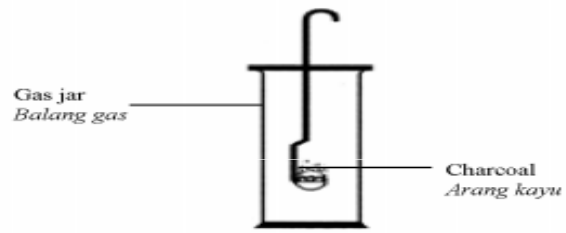


Diagram 5.3  
*Rajah 5.3*

Write the word equation to represent the burning of charcoal.  
*Tulis persamaan perkataan bagi mewakili pembakaran arang.*

Carbon + oxygen → .... + ..... + .....

[2 marks]

c) The diagram 5.4 shows an activity to study the component in the air.  
*Rajah 5.4 menunjukkan aktiviti bagi mengkaji komponen dalam udara.*



Diagram 5.4  
*Rajah 5.4*

The bread in Diagram 5.4 (a) is kept in the vacuum container, while diagram 5.4 (b) is left outside for one week.  
*Roti dalam Rajah 5.4 (a) disimpan dalam bekas vakum, manakala Rajah 5.4 (b) ditinggalkan di luar selama satu minggu.*

(i) State what happen to the bread in diagram 5.4 (a), after one week.  
*Nyatakan apa yang berlaku kepada roti dalam rajah 5.4(a) selepas satu minggu.*

[1 mark]  
 [1 markah]

(ii) Give the reason?  
*Berikan alasan?*

[1 mark]

5 Diagram 5.1 shows an activity to study the property of an alkali. The red litmus paper does not change colour.  
*Rajah 5.1 menunjukkan aktiviti untuk mengkaji ciri alkali. Kertas litmus merah tidak tukar warna.*

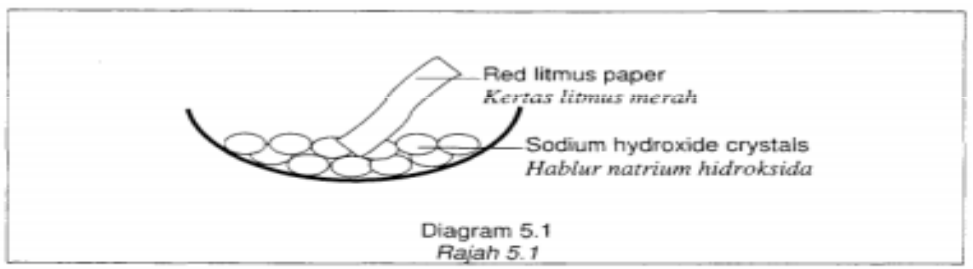


Diagram 5.1  
*Rajah 5.1*

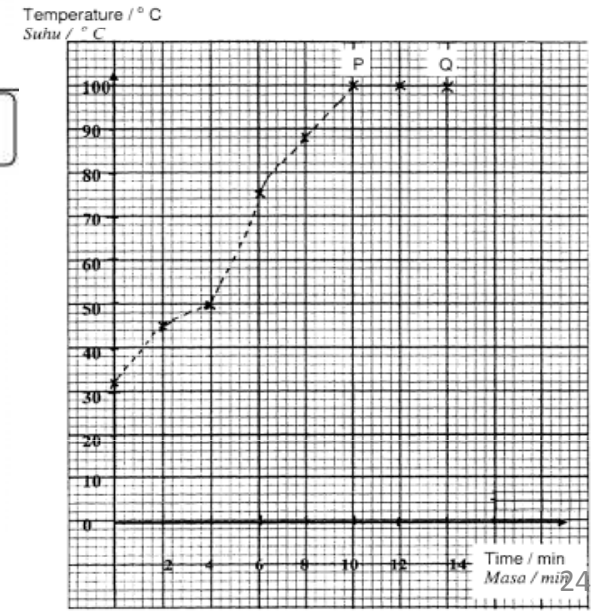
(a) (i) Suggest a way to change the colour of the red litmus paper.  
*Cadangkan satu cara untuk menukar warna kertas litmus merah.*

[1 mark]  
 [1 markah]

(ii) Give an example of an everyday substance which will change the colour of the red litmus paper.  
*Berikan satu contoh bahan kehidupan setiap hari yang boleh menukarkan warna kertas litmus merah.*

[1 mark]  
 [1 markah]

(b) Graph 5.2 shows the temperature readings of water in an experiment.  
*Graf 5.2 menunjukkan bacaan suhu air dalam suatu eksperimen.*



Graph 5.2

**CHAPTER 5**  
**WATER AND SOLUTION**

SELANGOR 08 → Question 5

Dari muka surat sebelah...

- (i) What is represented by the straight line PQ?  
*Apakah yang diwakili oleh garis PQ?*
- ..... [1 mark]
- (ii) State the change in the state of matter at PQ.  
*Nyatakan perubahan keadaan jirim pada PQ.*
- ..... [1 mark]
- ..... [1 markah]
- (iii) What happens to the boiling point if some sugar is added to the water?  
*Apakah yang berlaku kepada takat didih sekira sedikit gula dimasukkan ke dalam air?*
- ..... [1 mark]
- ..... [1 markah]
- (iv) Plot a point **S** on the graph to show your answer in b (iii).  
*Plotkan satu titik S pada graf untuk menunjukkan jawapan di b (iii).*
- ..... [1 mark]

- (c) Complete the word equation for this reaction.  
*Lengkapkan persamaan perkataan untuk tindakbalas ini.*



[2 marks ]  
 [2 markah ]

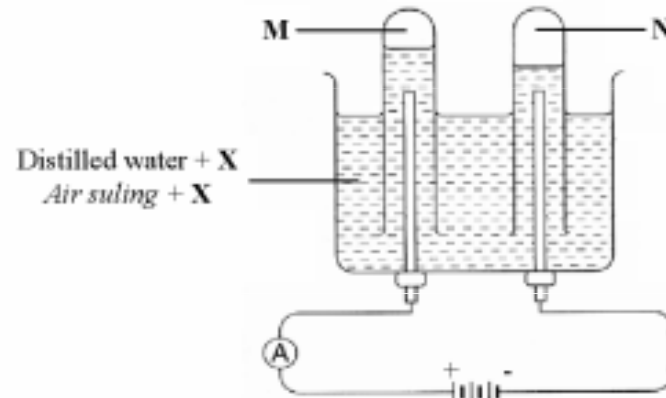
- (d) Based on Diagram 4.1, complete Table 4.2 below.  
*Berdasarkan Rajah 4.1, lengkapkan Jadual 4.2 di bawah.*

Gas <i>Gas</i>	Test with <i>Uji dengan</i>	Observation <i>Pemerhatian</i>
M	Glowing splinter <i>Kayu uji berbara</i>	
N	Lighted splinter <i>Kayu uji menyala</i>	

Table 4.2  
 Jadual 4.2

[2 marks ]

- 4 Diagram 4.1 shows the apparatus set-up to investigate the elements in water by electrolysis.  
*Rajah 4.1 menunjukkan susunan radas untuk menyiasat kandungan unsur-unsur dalam air melalui elektrolisis.*



- a) Based on Diagram 4.1, name gas M and N.  
*Berdasarkan Rajah 4.1, namakan gas M dan N.*
- M : .....
- N : .....
- [2 marks ]  
 [2 markah ]

- b) (i) Name substance X.  
*Namakan bahan X.*
- ..... [1 mark ]  
 [1 markah ]

- (ii) What is the function of substance X?  
*Apakah fungsi bahan X?*
- ..... [1 mark ]



4. Diagram 4 shows an experiment carried out to determine the composition of water.

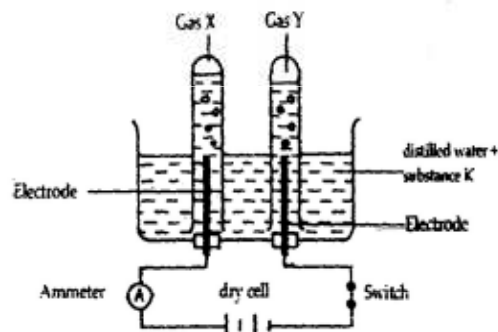


Diagram 4

(a) What is this process called?

.....[1 mark]

(b) The experiment cannot be started before the substance K are added to the distill water.

(i) Name the substance K that is added to distilled water.

.....[1 mark]

(ii) State the function of substance K.

.....[1 mark]

(c) A student carried out the test to identify gas Y. Complete the table below to show the observation of the test.

Procedure	Observation
Test with a burning wooden splinter	

[1 mark]

(d) State the ratio of gas Y to gas X in a molecule of water.

.....[1 mark]

(e) Based on the ratio stated in (d), draw and label a molecule of water in the spaces provided below.

[2 markah]

Diagram 2 shows a scientific method to determine the composition of water.  
Rajah 2 menunjukkan kaedah saintifik untuk menentukan komposisi air.

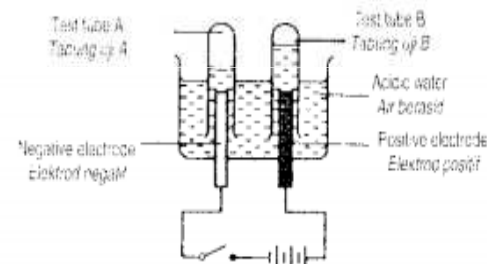


DIAGRAM 2  
RAJAH 2

(a) What is the name of the process shown above?

Apakah nama proses yang ditunjukkan di atas?

..... [1 mark]  
[1 markah]

(b) Give another name for :

Benakan nama lain untuk :

(i) Positive electrode :

Elektrod positif

(ii) Negative electrode :

Elektrod negatif

..... [2 marks]  
[2 markah]

(c) State the energy changes in this process.

Nyatakan perubahan tenaga yang berlaku semasa proses ini.

..... [1 mark]  
[1 markah]

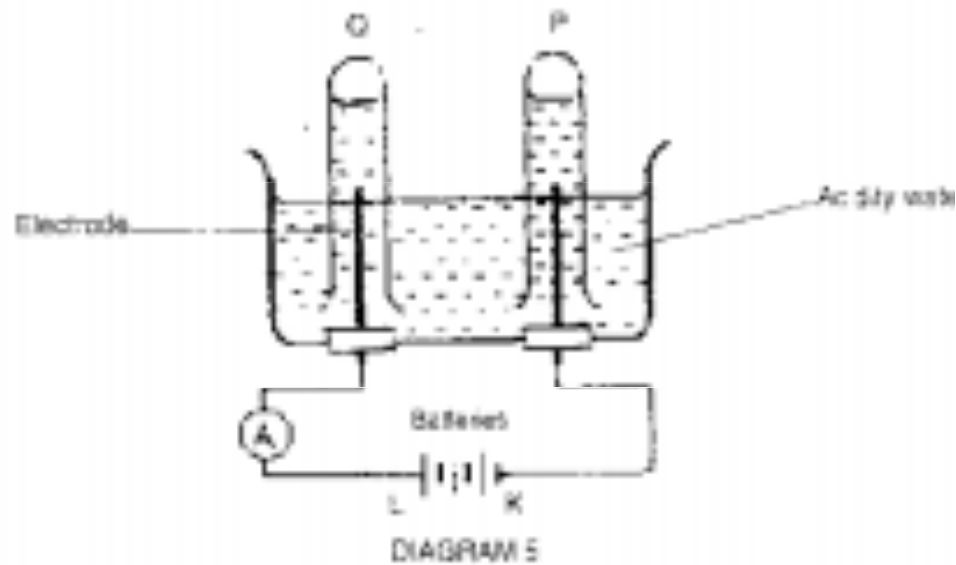
(e) What is the ratio of the volume of gas collected in test tube A with the volume of gas collected in test tube B?

Apakah nisbah isipadu gas yang terkumpul di dalam tabung uji A kepada isipadu gas di dalam tabung uji B?

..... [1 mark]  
[1 markah]

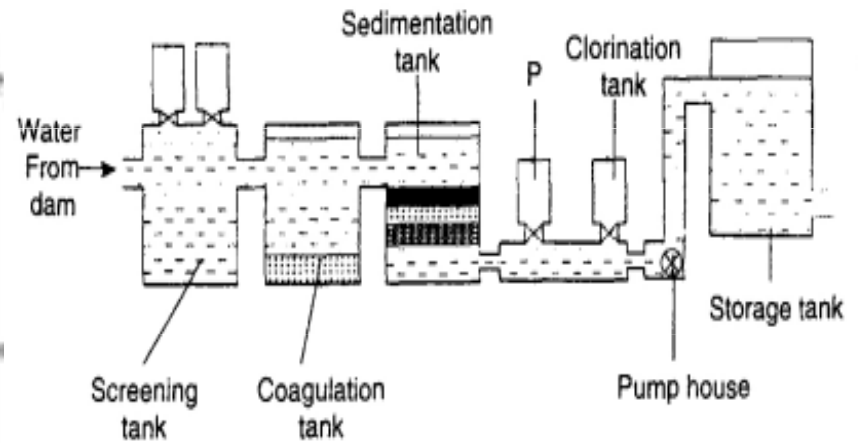
## SELANGOR 06 → Question 4

Diagram 5 shows the apparatus used to study the corrosion of water through the process of electrolysis.



- (a) (i) Name the gas collected at P.  
 \_\_\_\_\_ [1 mark]
- (ii) State one test to confirm the presence of gas collected at P.  
 \_\_\_\_\_ [1 mark]
- (b) What happens if the terminals K and L are reversed?  
 \_\_\_\_\_ [1 mark]
- (c) If the volume of gas collected at P is  $10 \text{ cm}^3$ , what is the volume of gas collected at Q?  
 \_\_\_\_\_  $\text{cm}^3$  [1 mark]

Diagram 6 shows the process of water purification that occurs at a treatment plant.



- (d) (i) Why is alum usually added in the coagulation tank?  
 \_\_\_\_\_ [1 mark]
- (ii) How does filtration at P help in the purification?  
 \_\_\_\_\_ [1 mark]
- (e) Table 1 shows solution K and M with their respective pH values.

Solution	K	M
pH	14	2

TABLE 1

$10 \text{ cm}^3$  of distilled water is added to solution K and M. What will happen to the pH values of the solution.

- K \_\_\_\_\_
- M \_\_\_\_\_ [2 marks]

N. SEMBILAN 06 → Question 4

Figure 4.1 shows a set-up of an experiment to investigate the neutralisation between diluted hydrochloric acid and sodium hydroxide solution. The result of the experiment is shown in Table 4.2.

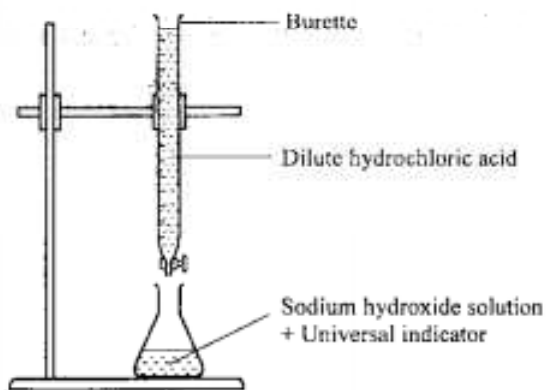


FIGURE 4.1

Change in colour	Initial	Final
	Purple	Green

TABLE 4.2

(a) (i) Why must we add the universal indicator into the conical flask?

.....  
[ 1 ]

(ii) State one the reason for your answer in (a) (i).

.....  
[ 1 ]

(b) Write a word equation to show the reaction between the hydrochloric acid and sodium hydroxide.



[ 2 ]

(c) Figure 4.3 shows several liquid substances.

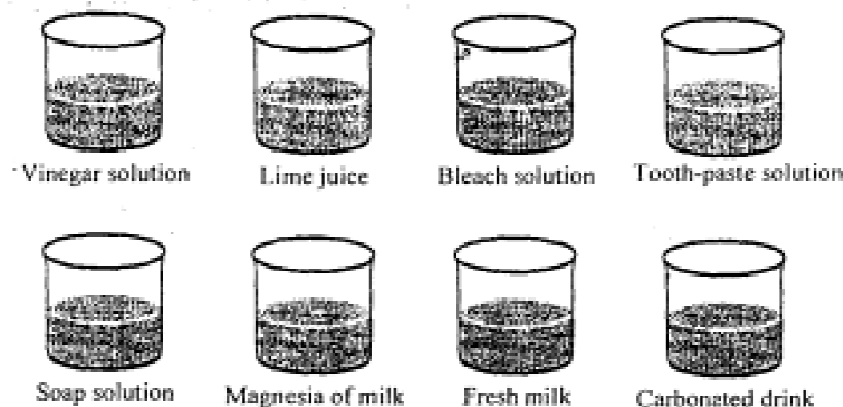


FIGURE 4.3

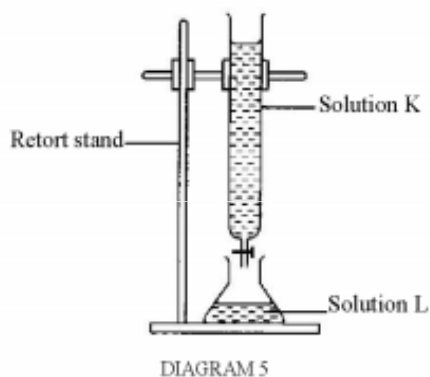
Based on the Figure 4.3, complete Table 4.4 by classifying the substances according to their properties.

Acid	Alkali
Lime juice	Soap solution

TABLE 4.4

[ 3 marks ]

5 Diagram 5 shows the titration process.



(a) What is neutralisation?

.....  
[1 mark]

(b) Write down the general word equation for the neutralisation reaction.

.....  
[1 mark]

(c) Give **one** example of solution K and L.

Solution K : .....

Solution L : .....

[2 marks]

(d) (i) What is the colour of the universal indicator at the end-point of the reaction?

.....  
[1 mark]

(ii) What is the type of solution formed if the volume of solution K is more than solution L in the conical flask?

.....  
[1 mark]

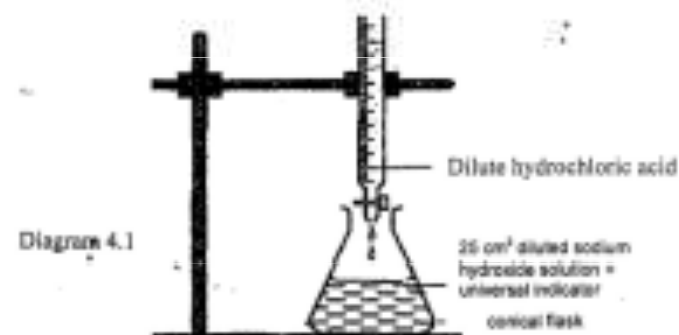
(e) State **two** uses of neutralisation in our daily life.

(i) .....

(ii) .....

[2 marks]

Diagram 4.1 shows a reaction between dilute hydrochloric acid and sodium hydroxide solution.



The result of the experiment is recorded in the table below:

Change in colour of universal indicator	Initial	Final
	Purple	X
pH value	9	7

Table 4.2

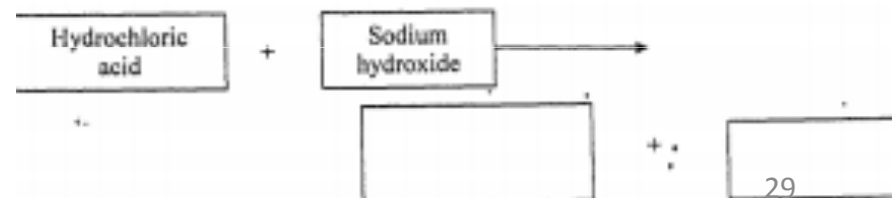
(a) i) State the colour of X?

..... [1 mark]

ii) Name the process that causes this change in colour.

..... [1 mark]

(a) (iii) Complete the word equation that shows the reaction.



[2 ma

b) Diagram 4.3 shows several substances with different pH values.

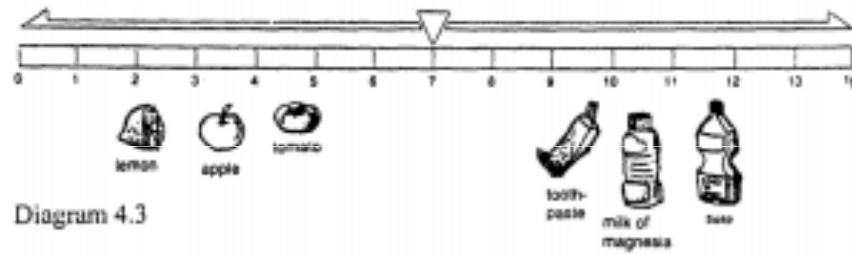


Diagram 4.3

i) Based on the pH value of substances in Figure 4, complete the table below. For each group give one example only.

	Acidic	Alkaline
Name of substances		

[2 mark]

(b) (ii) Estimate the new pH value if lemon juice is mixed with soap water. Circle the correct pH value.

pH 2	pH 7	pH 12
------	------	-------

[1 mark]

(b) (iii) Why is toothpaste used to prevent tooth decay?

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SELANGOR 07 → Question 3

5. Figure 5 shows a reaction between solution X and dilute sodium hydroxide solution.

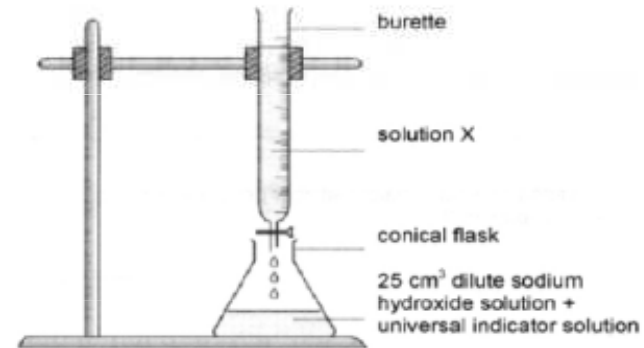


FIGURE 5

The result of the experiment is recorded in Table 3.

Volume of solution X / cm <sup>3</sup>	5	10	15	20	25	30	35	40
pH	14	12	10	8	7	6	5	4

TABLE 3

(a) State two characteristics of solution X.

- \_\_\_\_\_
  - \_\_\_\_\_
- [2 marks]

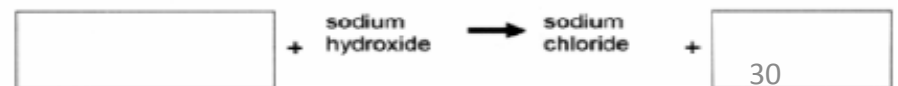
(b) State the volume of solution X needed to neutralise 25 cm<sup>3</sup> of dilute sodium hydroxide.

\_\_\_\_\_ [1 mark]

(c) What is the colour of the universal indicator when 15 cm<sup>3</sup> of solution X is added into the dilute sodium hydroxide solution in the conical flask?

\_\_\_\_\_ [1 mark]

(d) Complete the equation below.



[2 marks]

2 Figure 2 shows the main stages of water treatment process.

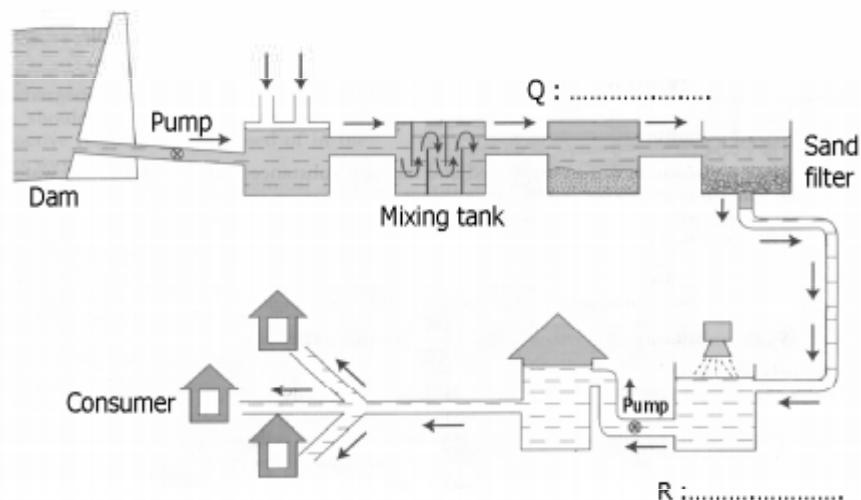


Figure 2

(a) Complete the stages in Figure 2 by using **two** of the following words:

- |                    |                   |                  |
|--------------------|-------------------|------------------|
| Sedimentation tank | Chlorination tank | Coagulation tank |
|--------------------|-------------------|------------------|

[2 marks]

(b) Slaked lime and alum are added into tank P. State the functions of these substances.

i) Slaked lime: .....

ii) Alum : .....

[2 marks]

(c) State **two** steps that can be taken to reduce water pollution.

i) .....

ii) .....

[2 marks]

4. Figure 4 shows an apparatus to show that temperature affects air pressure.

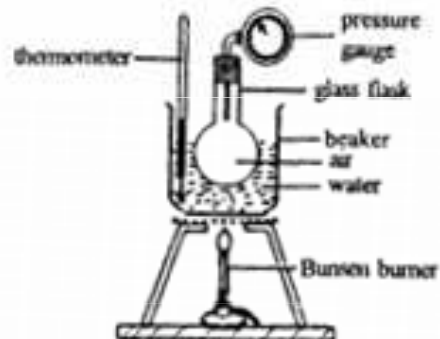


Figure 4

(a) What is the function of the pressure gauge?

.....  
(1 mark)

(b) What happens to the air pressure in the glass flask when the water is heated?

.....  
(1 mark)

(c) Based on your observation, what is the relationship between temperature and air pressure?

.....  
(1 mark)

(d) Choose **two** devices from the box below which use the principle of air pressure to operate.

- |                 |        |             |               |
|-----------------|--------|-------------|---------------|
| electric kettle | siphon | rice cooker | rubber sucker |
|-----------------|--------|-------------|---------------|

(i) .....

(ii) .....

(2 marks)

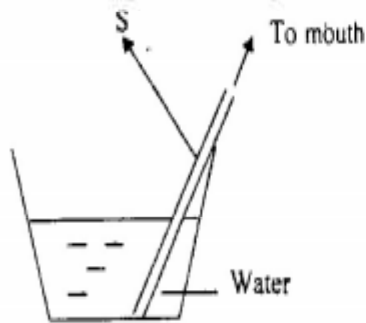
(e) Besides temperature, state **one** other factor that affects air pressure.

.....  
(1 mark)



Diagram 4.1 shows a set-up of apparatus to investigate air pressure.  
*Rajah 4.1 menunjukkan satu set radas untuk mengkaji tekanan udara.*

3. The diagram shows devices using the principal of air pressure.



a) What is the function of the device labelled:

S - \_\_\_\_\_

b) (i) What happens when air is sucked out of the drinking straw?

\_\_\_\_\_

(ii) Give one reason for your answer in b (i)

\_\_\_\_\_

c) What happens when there is a hole on the drinking straw?

\_\_\_\_\_

c) Name two other devices that use the principal of air pressure:

i) \_\_\_\_\_

ii) \_\_\_\_\_

(1 mark)

(1 mark)

(1 mark)

(1 mark)

(1 mark)

(1 mark)

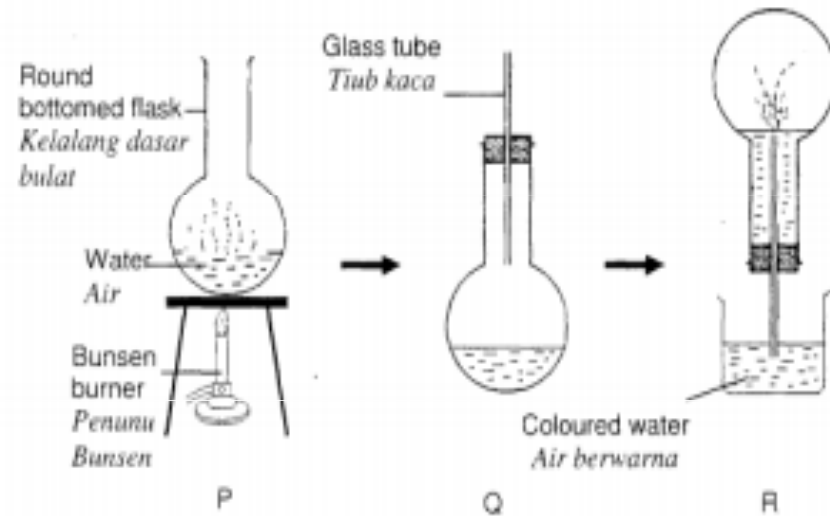


Diagram 4.1  
*Rajah 4.1*

(i) State a reason for boiling the water in P.  
*Nyatakan satu sebab mengapa air perlu dipanaskan dalam P.*

[1 mark]  
 [1 markah]

(ii) State one observation in R.  
*Nyatakan satu pemerhatian dalam R.*

[1 mark]  
 [1 markah]

(iii) Explain your answer in a (ii).  
*Terangkan jawapan anda di a (ii).*

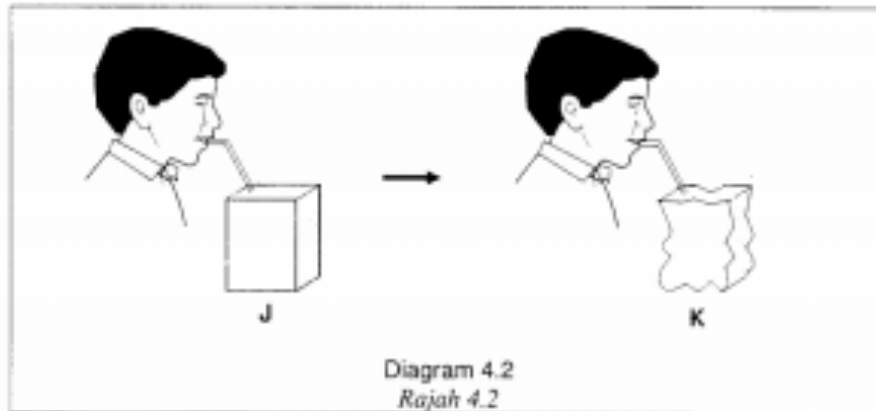
[1 mark]  
 [1 markah]



- (iv) What is the conclusion for this activity ?  
Apakah kesimpulan aktiviti ini ?

[1 mark]  
[1 markah]

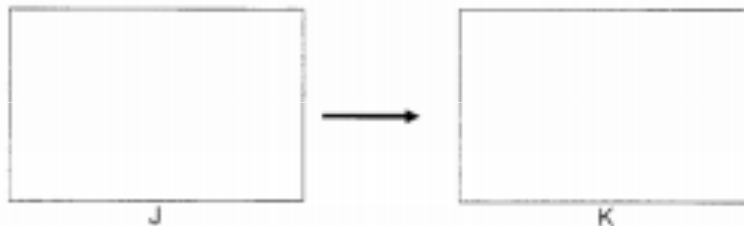
- (b) Diagram 4.2 shows a person drinking from a packet of juice. The packet collapses.  
Rajah 4.2 menunjukkan seorang sedang minum dari satu kotak minuman jus. Kotak minuman menjadi kemek.



- (i) What step can you take to change K to its original shape ?  
Apakah langkah yang anda boleh lakukan untuk mengembalikan K ke bentuk asalnya?

[1 mark]  
[1 markah]

- (ii) Draw particles in the boxes given to show the changes that has occurred in J and K.  
Lukiskan zarah-zarah di dalam kotak untuk menunjukkan perubahan yang berlaku di J dan K.



[1 mark]  
[1 markah]

TERENGGANU 07 → Question 4

Diagram 4.1 shows a man is pushing a box into a lorry.  
Rajah 4.1 menunjukkan seorang lelaki sedang menolak sebuah kotak ke dalam sebuah lori.

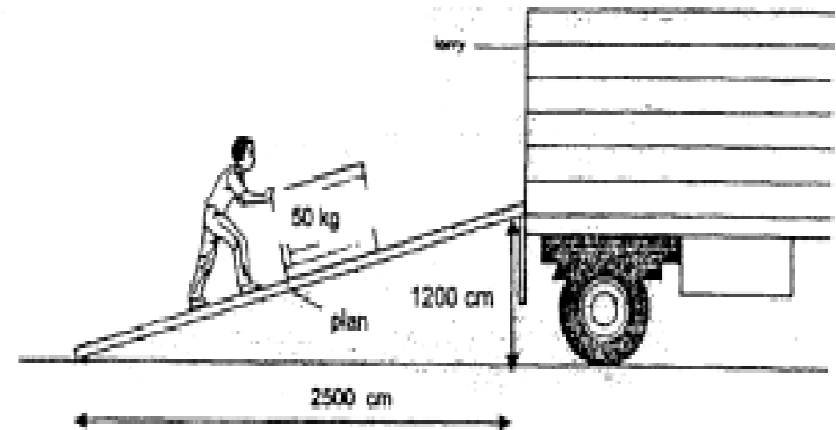


DIAGRAM 4.1  
RAJAH 4.1

- a) Explain why the man is said to do a work?  
Terangkan mengapa lelaki tersebut dikatakan melakukan kerja?

.....  
.....

[1 mark]

- b) Based on Diagram 4.1, using Work done = Force x Distance, how much work is done by the man.  
Berdasarkan Rajah 4.1, menggunakan Kerja = Daya x Jarak, berapakah kerja yang telah dilakukan oleh lelaki tersebut.

MELAKA 08 → Question 4

- c) What happen to the work done, if the man in Figure 4.1 use a trolley to push the box. Explain your answer.  
*Apakah yang berlaku terhadap kerja jika lelaki dalam Rajah 4.1 menggunakan troli untuk menolak kotak. Jelaskan jawapan anda.*

.....  
 .....  
 [ 2 marks ]

- d) Diagram 4.2 shows how to push a box using two different situations.  
*Rajah 4.2 menunjukkan bagaimana menolak kotak menggunakan dua keadaan yang berbeza.*

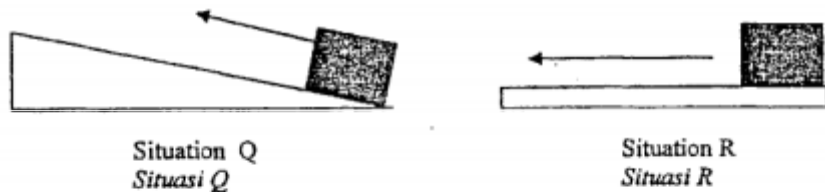


DIAGRAM 4.2  
 RAJAH 4.2

- i) Based on Diagram 4.2, which situation is harder to push the box?  
*Berdasarkan Rajah 4.2, keadaan manakah lebih sukar untuk menolak kotak?*

.....  
 [1 mark]

- ii) Give a reason.  
*Nyatakan sebabnya.*

.....  
 [1 mark]

Diagram 4.1 above shows a student carried out an activity to determine the work done.  
*(Rajah 4.1 di atas menunjukkan pelajar menjalankan aktiviti untuk mendapatkan kerja yang lengkap.)*

- a) Name the measuring tool above.  
*(Namakan alat pengukuran di atas)*

..... [1 mark]

- b) State the function of the apparatus in (a)  
*(Nyatakan fungsi radas dalam (a))*

..... [1 mark]

- c) Record the reading of the measuring tool in Diagram 4.1  
*(Rekodkan bacaan pada alat pengukuran dalam rajah 4.1)*

..... [1 mark]

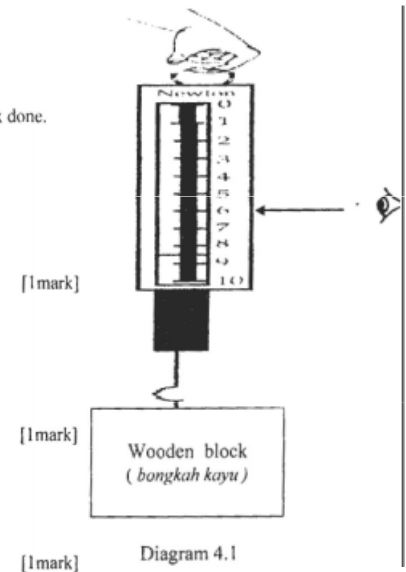


Diagram 4.1



Diagram 4.2  
 (Rajah 4.2)

A man lifting a 70N suitcase  
*(Seorang lelaki mengangkat beg 70N)*

A man lifted a 70N suitcase onto his shoulder a vertical distance of a 3.5m.  
 How much work did he do?  
*(Seorang lelaki mengangkat beg 70N melalui jarak mendatar sejauh 3.5m.  
 Berapakah kerja yang telah dia lakukan?)*

JOHOR 08 → Question 5

5. a) Based on the situation in Diagram 5 (a) and 5(b), state the forces involved.  
 Berdasarkan situasi dalam Rajah 5 (a) dan 5(b), nyatakan daya yang terlibat.



Diagram 5 (a)



Diagram 5 (b)



[2 marks]

- b) What is the unit used to measure force?  
 Apakah unit yang digunakan untuk mengukur daya?

[1 mark]

c)

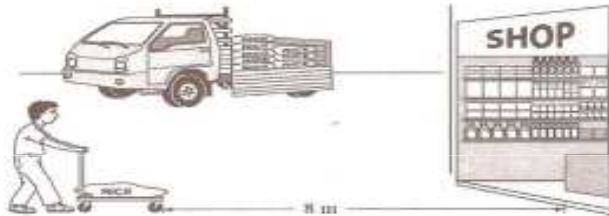


Diagram 5 (c)  
 Rajah 5 (c)

Diagram 5 (c) shows a worker pushes a sack of rice from a lorry to the shop. If the frictional force between the trolley and the ground is 500 N, calculate the work done by the worker in the figure above.

Rajah 5 menunjukkan seorang pekerja menolak gusi beras dari lori ke kedai. Jika daya geseran di antara trolly dan tanah ialah 500N. Kirakan kerja yang dilakukan oleh pekerja dalam rajah di atas.

- d) If the worker takes 30 seconds to reach the shop, calculate the power used by the worker.

Jika pekerja itu mengambil masa 30 saat untuk sampai ke kedai, kirakan kuasa yang digunakan oleh pekerja itu.

Power	=	Work done Time taken
-------	---	-------------------------

PERAK 07 → Question 5

- 5 Diagram 5 shows a boy of mass 55 kg climbing up a flight of stairs.

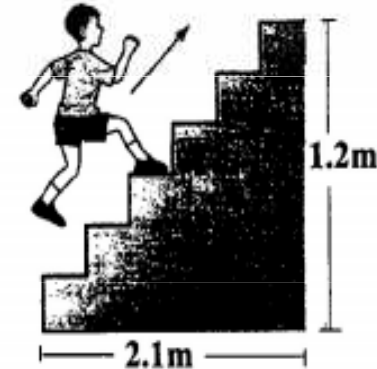


DIAGRAM 5

- (a) (i) Name the force that acts against the boy as he climbs up the stairs.

.....  
 (1 mark)

- (ii) Find the value of the force in (i) (1 kg = 10 Newton).

.....  
 (1 mark)

- (iii) Calculate the work done by the boy.

.....  
 (1 mark)

- (iv) If the time taken for the boy to reach the top of the stairs is 6 seconds, calculate the power of the boy.

(2 marks)

- (b) If the same boy walks the same distance on a level ground, what conclusion can you make about the work done compared to a(iii)?

.....  
 (1 mark)

- (c) State the force that enables the boy to climb up the stairs without slipping.

JOHOR 06 → Question 4

Figure 4.1 shows an experiment to study the effect of the frictional force. The results of the experiment is shown in Table 4.2.



FIGURE 4.1

Things that are put under the wooden block	Total weights/frictional force (N)
Without anything ( control )	0.6
Ball bearings	0.1

TABLE 4.2

The above observations show that frictional force can be reduced by the ball bearing.

- a) i) State another way to reduce friction.

.....  
[ 1 mark ]

- ii) Give one disadvantage of frictional force.

.....  
[ 1 mark ]

- b) State the force acted on each situation in Figure 4.3

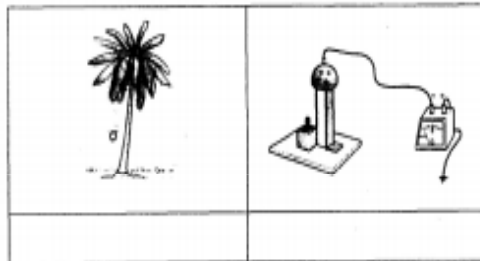


FIGURE 4.3

[ 2 marks ]

- c) Figure 4.4 shows a 50kg passenger pushing the 30kg load at a distance of 50m. He reached the check in door in 2 minutes,

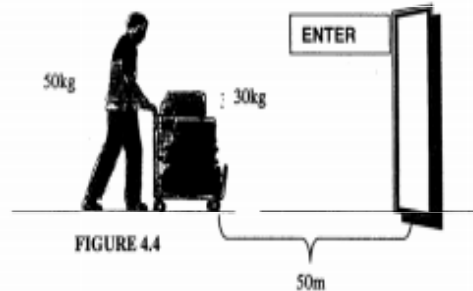


FIGURE 4.4

- i) Show with an arrow the direction of frictional force on Figure 4.4.

[ 1 mark ]

- ii) Calculate the work done by the man.  
(Work = Force X Distance)

..... Joules

[ 2 marks ]

- iii) Calculate the power generated by the man.

$$\text{Power} = \frac{\text{work}}{\text{Time}}$$

SBP 08 → Question 4

- 4 Diagram 4 shows the skeletal system of a blue whale.

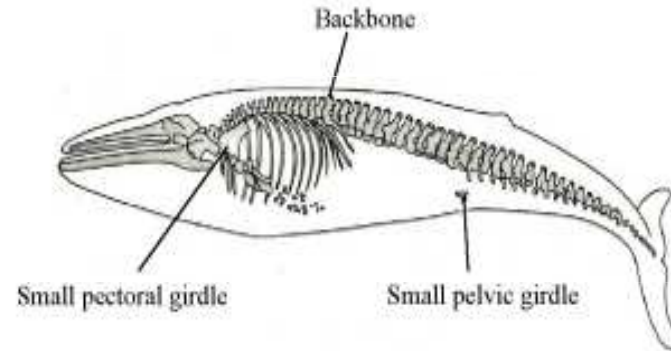


DIAGRAM 4

- (a) Name the type of support system for the blue whale.

.....  
[ 1 mark ]

- (b) State other **two** types of support systems for animals.

- i. ....  
ii. ....

[ 2 marks ]

- (c) How can a whale support their big body size in the sea?

.....  
[ 1 mark ]

- (d) Each year, many whales get beached or stranded in shallow water. When a whale is beached, it is unable to support itself. Explain why?

.....  
.....  
.....

MRSM 08 → Question 2

2. Diagram 2.1 shows animals J, K and L with different types of support system. *Rajah 2.1 menunjukkan haiwan J, K dan L yang mempunyai jenis sistem sokongan yang berlainan.*

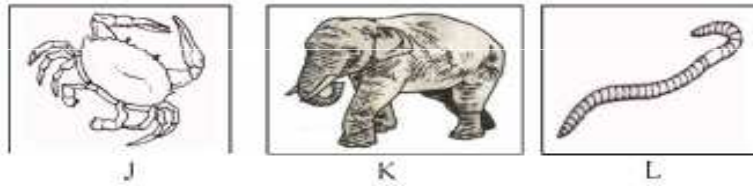


Diagram 2.1  
*Rajah 2.1*

a) (i) In the space provided on Diagram 2.1, name type of skeleton for any two of animals. *Dalam ruang yang disediakan pada Rajah 2.1, namakan jenis rangka bagi mana-mana dua haiwan.* [2 marks] [2 markah]

(ii) Give one other example of an animal that has the same support system as : *Berikan satu contoh lain haiwan yang mempunyai sistem sokongan yang sama seperti :*

K : .....

L : .....

b) Diagram 2.2 shows *Hydrilla* plant in two different situation *Rajah 2.2 menunjukkan Hydrilla dalam dua situasi yang berbeza.*

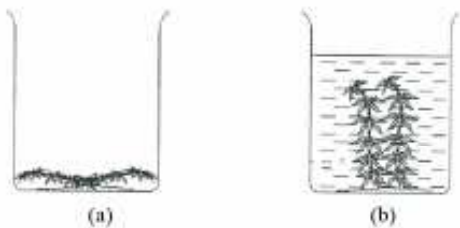


Diagram 2.2  
*Rajah 2.2*

Based Diagram 2.2, give the reason for the condition of *Hydrilla* in situation (b).

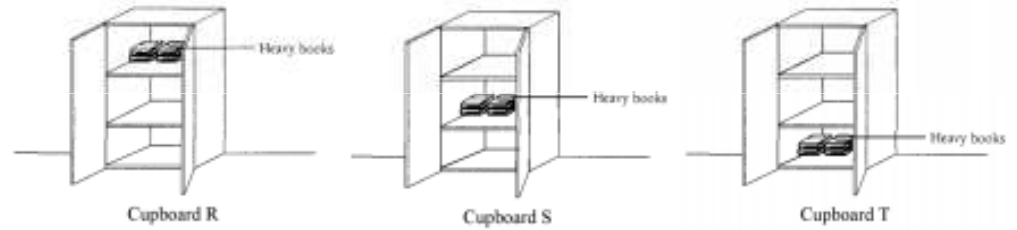
*Berdasarkan Rajah, berikan sebab bagi keadaan Hydrilla seperti dalam situasi (b).*

.....  
.....

[2 marks]

SBP 07 → Question 6

6 Diagram 6.1 shows three cupboards R, S and T with some heavy books stored in it.



(a) On Diagram 6.1, mark "X" at where the centre of gravity of the three cupboards will be. [3 marks]

(b) (i) Which cupboard is more stable?

..... [1 mark]

(ii) Give one reason for your answer in (b) (i).

..... [1 mark]

(iii) Using the letter in Diagram 6.1, complete the diagram below to show the stability of the cupboards in descending order.



[1 mark]

(c) Diagram 6.2 shows a giraffe drinking water from a pond.



DIAGRAM 6.2

Based on Diagram 6.2,

(i) How the giraffe maximise its stability?

..... [1 mark]

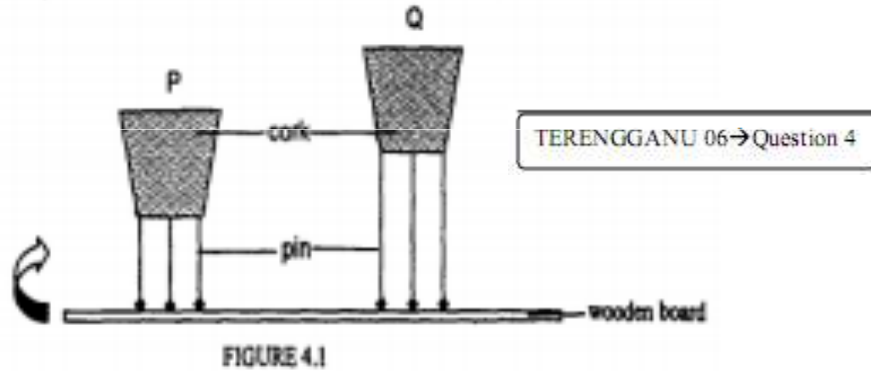
(ii) Explain your answer in (c) (i).

.....  
.....

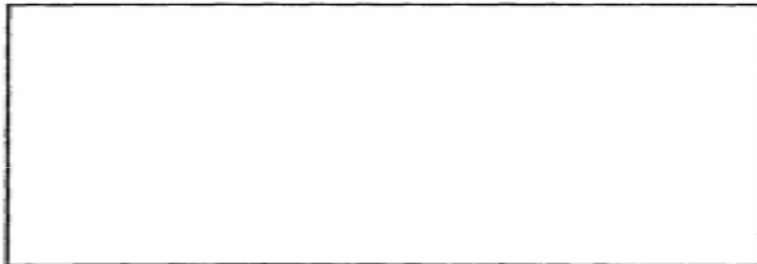
[2 marks]



Figure 4.1 shows two different models, P and Q which are made from corks and pins. The two models are placed on a wooden board and then tilted as shown in figure.



- a) i) Which model more stable?  
 .....  
 (1 mark)
- ii) Why?  
 .....  
 (1 mark)
- b) Draw a diagram to show a way to increase the stability of model Q by referring Figure 4.1.



(2 marks)

c) Figure 4.2 shows a way of art of self-defence



FIGURE 4.2

- i) Based on Figure 4.2 clarify the way to stabilize his body.  
 .....  
 .....  
 (2 marks)
- ii) Give the reason.  
 .....  
 .....  
 (2 marks)

Diagram 4.1 shows a bottle opener.

Rajah 4.1 menunjukkan pembuka botol.



Diagram 4.1  
 Rajah 4.1

PERAK 08 -> Question 4

- (a) i) Based on Diagram 4.1, state the class of lever of the bottle opener.  
 Berdasarkan Rajah 4.1, nyatakan kelas tuas bagi pembuka botol itu.

.....  
 [1 mark]  
 [1 markah]

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

.....  
 [1 mark]  
 [1 markah]

Diagram 4.2 shows a nail being pulled out using tools P and Q.

Rajah 4.2 menunjukkan sebatang paku dicabut dengan menggunakan alat P dan alat Q.

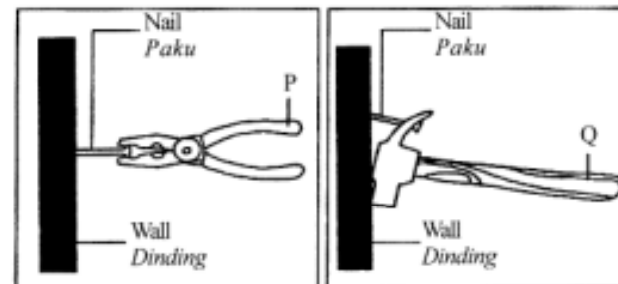


Diagram 4.2  
 Rajah 4.2

Based on Diagram 4.2 state the difference about amount of energy used to pull out the nail by tools P and Q.

Berdasarkan Rajah 4.2, nyatakan perbezaan mengenai jumlah tenaga yang digunakan untuk mencabut paku dengan alat P dan alat Q.

PERAK 08 → Question 4

- (c) Diagram 4.3 shows a fish seller carrying two baskets J and K.  
*Rajah 4.3 menunjukkan seorang penjual ikan membawa dua bakul J dan K.*

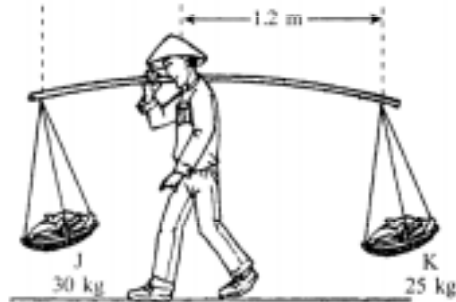


Diagram 4.3  
*Rajah 4.3*

Calculate the distance between the seller and basket J so that the baskets are balanced.  
*Hitungkan jarak di antara penjual dan bakul J untuk menyeimbangkan bakul itu.*

[2 marks]  
 [2 markah]

- (d) Diagram 4.4 shows a boy trying to move the stone using a piece of wood.  
*Rajah 4.4 menunjukkan seorang budak lelaki cuba menggerakkan batu menggunakan sebatang kayu.*



Diagram 4.4  
*Rajah 4.4*

Label the position of fulcrum, effort and load on Diagram 4.4  
*Labelkan kedudukan fulkrum, daya dan beban pada Rajah 4.4*

[1 marks]

Figure 3.1 shows a claw hammer.

*Rajah 3.1 menunjukkan tukul kuku kambing.*

JOHOR 07 → Question 3



Figure 3.1  
*Rajah 3.1*

- a) i) Based on figure 3.1, state the class of lever of the claw hammer.  
*Berdasarkan rajah 3.1, nyatakan kelas tuas bagi tukul tersebut.*

[1 mark]

- ii) What is the advantage of the lever that you mention in a(i)  
*Apakah kebaikan tuas yang anda nyatakan di a(i)*

- b) Draw lines to show the correct match between simple machine and the class levers.  
*Lukiskan garisan untuk menunjukkan padanan yang betul antara mesin ringkas dan kelas tuas.*

[1 mark]

Draw line as shown below.

*Lukiskan garisan seperti ditunjukkan di bawah*

Simple machine  
*Mesin ringkas*

Class lever  
*Kelas tuas*



First class  
*Kelas pertama*



Second class  
*Kelas kedua*



Third class  
*Kelas ketiga*

[2 marks]

- c) Figure 3.2 shows a see-saw. Linda's weight is 600 N and Daniel's weight is 400 N.

Rajah 3.2 menunjukkan sebuah jungkang-jongket. Berat Linda ialah 600 N dan berat Daniel ialah 400 N.

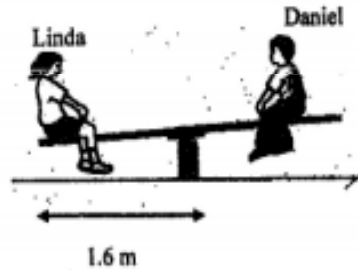


Figure 3.2  
Rajah 3.2

Calculate the distance of Daniel from the fulcrum so that the see-saw is balanced using the formula below.

Kira jarak antara Daniel dengan fulkrum supaya jungkang-jongket itu seimbang dengan menggunakan rumus di bawah.

<p>Load x distance from fulcrum = effort x distance from fulcrum                  Behan x jarak dari fulcrum = daya x jarak dari fulcrum</p>
--

Distance of Daniel from the fulcrum = \_\_\_\_\_ m  
 Jarak Daniel dari fulkrum

[ 2 marks ]

- 4 Diagram 4.1 shows the apparatus set up to investigate the absorption of substance through a Visking tube.  
 Rajah 4.1 menunjukkan susunan radas untuk mengkaji penyerapan bahan menerusi tiub Visking.

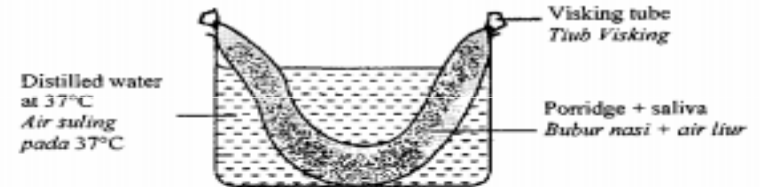


Diagram 4.1  
Rajah 4.1

- (a) What are represented by the Visking tube and distilled water in the human digestive system?  
 Apakah yang diwakili oleh tiub Visking dan air suling di dalam sistem pencernaan manusia?

(i) Visking tube  
 Tiub Visking

(ii) Distilled water  
 Air suling

[ 2 marks ]  
 [ 2 markah ]

- (b) Saliva contains an enzyme.  
 What is the function of the enzyme?  
 Air liur mengandungi enzim.  
 Apakah fungsi enzim tersebut?

[ 1 mark ]  
 [ 1 markah ]

- (c) (i) What substance diffuses out through the Visking tube into distilled water?  
 Apakah bahan yang meresap keluar melalui tiub Visking ke dalam air suling?

[ 1 mark ]  
 [ 1 markah ]

- (ii) Explain your answer in (c)(i).  
 Terangkan jawapan anda di (c)(i).

[ 1 mark ]  
 [ 1 markah ]

[ 1 mark ]  
 [ 1 markah ]

- (d) If saliva is boiled first before being added to the Visking tube, what is the observation when the distilled water is tested with Benedict's solution after 30 minutes?  
 Jika air liur dididihkan terlebih dahulu sebelum ditambah ke dalam tiub Visking, apakah pemerhatiannya apabila air suling tersebut diuji dengan larutan Benedict selepas 30 minit?

- 8 Diagram 8.1 shows two identical blankets P and Q. Both blankets are wet and are dried under the Sun. Blanket P is folded and blanket Q is not folded.  
*Rajah 8.1 menunjukkan dua selimut P dan Q yang serupa. Kedua-dua selimut itu adalah basah dan dijemur di bawah cahaya matahari. Selimut P dilipat dan selimut Q tidak dilipat.*

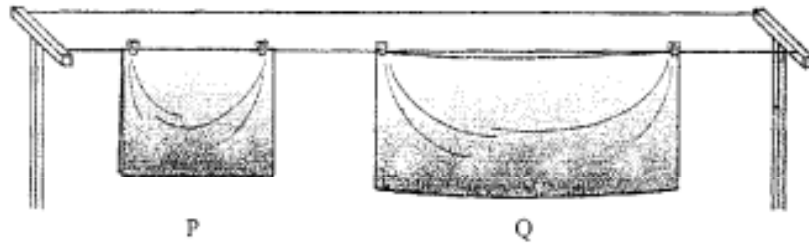


Diagram 8.1  
*Rajah 8.1*

Time taken to dry : 60 minutes  
*Masa yang diambil untuk kering :*  
 60 minit

Time taken to dry : 15 minutes  
*Masa yang diambil untuk kering :*  
 15 minit

- (a) Based on the observation in Diagram 8.1 :  
*Berdasarkan pemerhatian dalam Rajah 8.1 :*

- (i) Compare the difference in the rate of evaporation between blanket P and blanket Q.  
*Bandingkan perbezaan dalam kadar penyejatan antara selimut P dan selimut Q.*

.....  
 .....

[ 1 mark ]  
 [ 1 markah ]

- (ii) State one relationship between the surface area of the blanket and the time taken for the blanket to dry.  
*Nyatakan satu hubungan antara luas permukaan selimut tersebut dengan masa yang diambil untuk selimut tersebut kering.*

.....  
 .....

[ 1 mark ]

- (iii) Write one inference about blanket Q.  
*Tulis satu inferens mengenai selimut Q.*

.....  
 .....

[ 1 mark ]  
 [ 1 markah ]

- (b) A student carries out an experiment to investigate the situation in Diagram 8.1. Diagram 8.2 shows the containers used for the experiment.  
*Seorang murid menjalankan eksperimen untuk menyiasat situasi dalam Rajah 8.1. Rajah 8.2 menunjukkan bekas-bekas yang digunakan dalam eksperimen itu.*

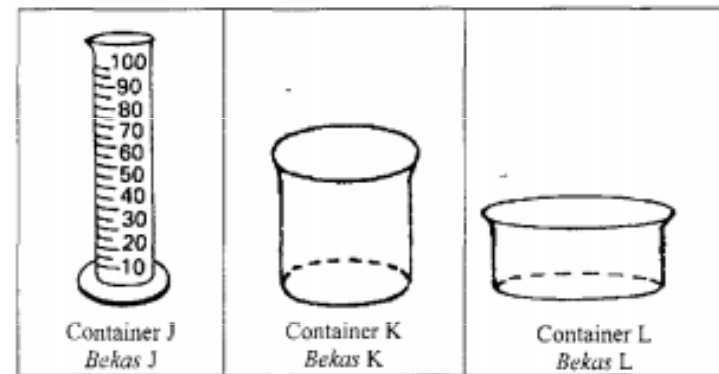





Diagram 8.2  
*Rajah 8.2*

The student takes the following steps :  
*Murid itu menjalankan langkah-langkah berikut :*

- Step 1 : Measure and pour 20 cm<sup>3</sup> of water into each of container.  
*Langkah 1 : Ukur dan tuangkan 20 cm<sup>3</sup> air ke dalam setiap bekas.*
- Step 2 : Keep all the containers in the same place.  
*Langkah 2 : Letakkan kesemua bekas di tempat yang sama.*
- Step 3 : Record the time taken for the water to evaporate from each container.  
*Langkah 3 : Rekod masa yang diambil untuk air menyejat dari setiap bekas.*

# Johor 2011

- (i) Record the stopwatch reading in the spaces provided.  
 Catatkan bacaan jam randik pada ruangan yang disediakan.

	Container J Bekas J  Surface area = 20 cm <sup>2</sup> Luas permukaan = 20 cm <sup>2</sup>  Stopwatch reading = 30 minutes Bacaan jam randik = 30 minit
	Container K Bekas K  Surface area = 80 cm <sup>2</sup> Luas permukaan = 80 cm <sup>2</sup>  Stopwatch reading = ..... minutes Bacaan jam randik ..... minit
	Container L Bekas L  Surface area = 140 cm <sup>2</sup> Luas permukaan = 140 cm <sup>2</sup>  Stopwatch reading = ..... minutes Bacaan jam randik ..... minit

[ 2 marks ]  
 [ 2 markah ]

Complete Table 8 by recording the reading of the stopwatch with the respective container.  
 Lengkapkan Jadual 8 dengan mencatatkan bacaan jam randik yang sepadan dengan bekas.

Container Bekas	Time taken to evaporate (minutes) Masa yang diambil untuk menyejat (minit)
J	30
K	
L	

Table 8

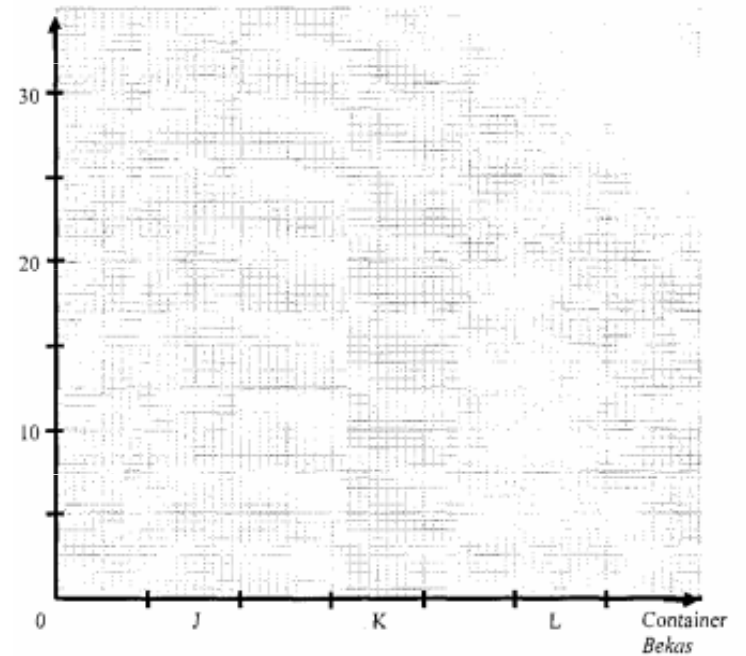
- (c) State the variables involved in this experiment.  
 Nyatakan pembolehubah yang terlibat dalam eksperimen ini.

Manipulated variable Pembolehubah dimanipulasi	
Responding variable Pembolehubah bergerakbalas	
Controlled variable Pembolehubah dimalarkan	

[ 3 marks ]  
 [ 3 markah ]

- (ii) Based on the data in Table 8, draw a bar chart to show the time taken for the water to evaporate in each container.  
 Berdasarkan data pada Jadual 8, lukis carta bar untuk menunjukkan masa yang diambil untuk air menyejat dalam setiap bekas.

Time taken to evaporate (minutes)  
 Masa yang diambil untuk menyejat (minit)



[ 2 marks ]

- (d) Based on Table 8, predict the reading of the stopwatch if container M with a surface area of 160 cm<sup>2</sup> is used.  
 Berdasarkan Jadual 8, ramalkan bacaan jam randik jika bekas M dengan luas permukaan 160 cm<sup>2</sup> digunakan.

[ 1 mark ]  
 [ 1 markah ]

- e) Based on the experiment, state the operational definition for rate of evaporation.  
 Berdasarkan eksperimen, nyatakan definisi secara operasi bagi kadar penyejatan.

42  
 [ 1 mark ]



## Kelantan 2011

2. Diagram 2 shows the skeletal system of a land vertebrate.  
*Rajah 2 menunjukkan sistem rangka suatu haiwan vertebrata darat.*



Diagram 2  
*Rajah 2*

- (a) (i) Name the type of support system of the animal.  
*Namakan jenis sistem sokongan pada haiwan ini.*
- .....  
 [ 1 mark ]
- (ii) State how aquatic vertebrate such as whale support their body weight.  
*Nyatakan bagaimana vertebrata akuatik seperti ikan paus menyokong berat badannya.*
- .....  
 [ 1 mark ]
- (b) State two functions of support system in animal.  
*Nyatakan dua fungsi sistem sokongan pada haiwan.*
- i. ....  
 ii. ....  
 [ 2 marks ]
- (c) State other types of support system in the land animals  
*Nyatakan jenis sistem sokongan lain pada haiwan darat.*
- i. ....  
 ii. ....  
 [ 2 marks ]

## Melaka 2011

3. Diagram 3.1 shows two beakers, X and Y containing a plant. Both beakers are placed in a room.  
*Rajah 3.1 menunjukkan dua bikar, X dan Y yang mengandungi sebatang tumbuhan. Kedua-dua bikar diletakkan di dalam bilik.*

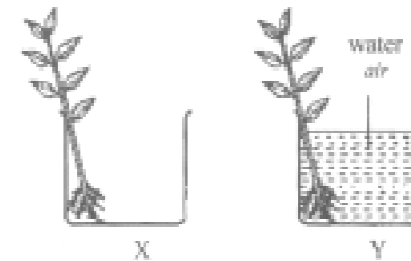


Diagram 3.1  
*Rajah 3.1*

- (a) (i) In which beaker the plant will wilt after one hour?  
*Tumbuhan dalam bikar manakah akan layu selepas satu jam?*
- .....  
 [1 mark]  
 [1 mark]
- (ii) Give one reason for the answer in 3.1(a).  
*Beri satu sebab bagi jawapan dalam 3.1(a).*
- .....  
 [1 mark]  
 [1 mark]
- (b) Diagram 3.2 shows two types of plants, P and Q.  
*Rajah 3.2 menunjukkan dua jenis tumbuhan, P and Q.*

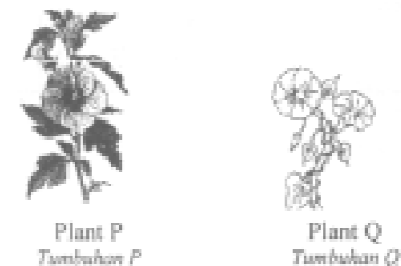


Diagram 3.2  
*Rajah 3.2*

(i) How are plant P and Q supported?  
 Bagaimanakah tumbuhan P dan Q mendapat sokongan masing-masing?

Plant P :

Tumbuhan P : .....

Plant Q:

Tumbuhan Q : .....

[2 marks  
 /2 markah]

(ii) Name one other plant which has the same support system as plant P.  
 Namakan satu tumbuhan lain yang mempunyai sistem sokongan seperti tumbuhan P.

.....

[1 mark  
 /1 markah]

(iii) Diagram 3.3 shows the cross sections of the stems of two plants.  
 Rajah 3.3 menunjukkan keratan rentas batang bagi dua tumbuhan.

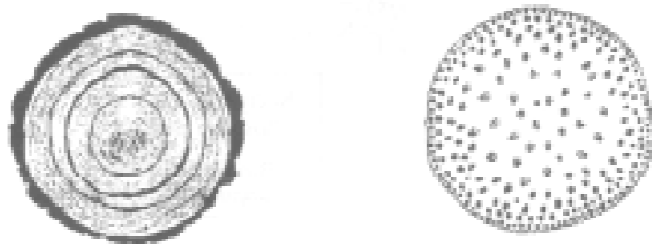


Diagram 3.3  
 Rajah 3.3

Which section shows the stem of plant Q?  
 Keratan rentas yang manakah sepadan dengan tumbuhan Q?

.....

[1 mark  
 /1 markah]

6. (a) The following are steps in an investigation to study that carbon dioxide is necessary for photosynthesis.  
 Berikut adalah langkah-langkah dalam suatu penyiasatan untuk menunjukkan karbon dioksida diperlukan untuk proses fotosintesis.

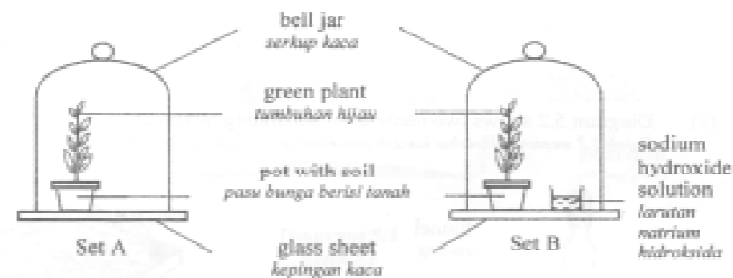


Diagram 6.1  
 Rajah 6.1

- Step 1 : Place two flowerpots containing green plants in a dark cupboard for two days.  
 Langkah 1 : Letakkan dua pasu tumbuhan hijau di dalam almari gelap selama dua hari.
- Step 2 : Set up the apparatus as shown in the Diagram 6.1. Expose the plants to sunlight for two hours.  
 Langkah 2 : Sediakkan radas seperti ditunjukkan dalam Rajah 6.1. Dedahkan tumbuhan itu di bawah cahaya matahari selama dua jam.
- Step 3 : Test a leaf for starch each from plants A and B.  
 Langkah 3 : Jalankan ujian karji keatas sehelai daun dari pada tumbuhan A dan B.

(i) Why should the apparatus in sets A and B be placed in the darkness for two days before the experiment?  
 Mengapa sah set radas A dan B perlu diletakkan dalam keadaan gelap selama dua hari sebelum memulakan eksperimen?

.....  
 [1 mark]  
 /1 markah]

(ii) Which set of plants that will indicate the presence of starch after two hours?  
 Tumbuhan daripada set manakah yang akan menunjukkan kehadiran karji selepas dua jam?

.....  
 [1 mark]  
 /1 markah]

(iii) What is the purpose of placing the sodium hydroxide solution in set A?  
 Apakah tujuan meletakkan larutan natrium hidroksida pada set A?

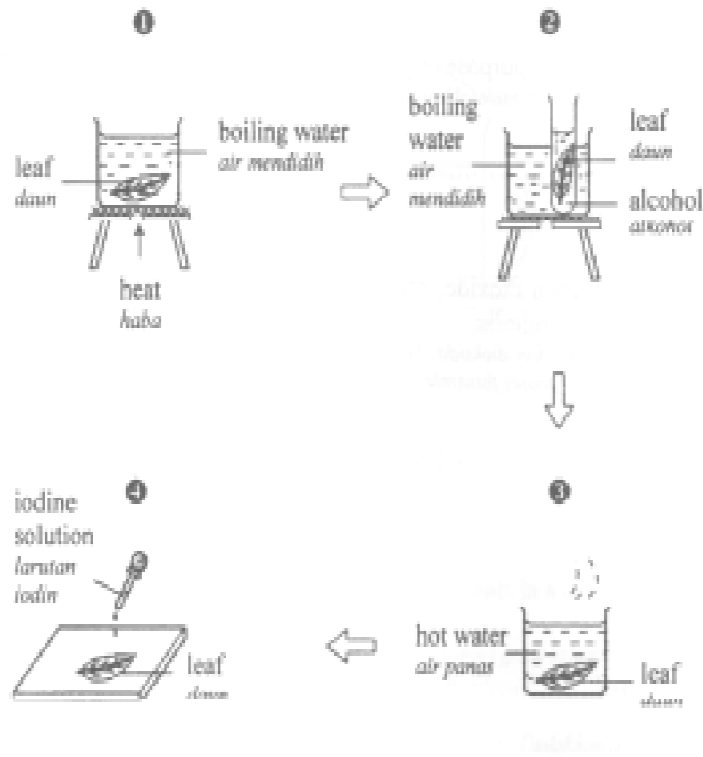
.....  
 [1 mark]  
 /1 markah]

(b) Apart from carbon dioxide, name one other substance required by green plants to carry out photosynthesis.  
 Selain daripada karbon dioksida, berikan satu bahan lain yang diperlukan oleh tumbuhan hijau untuk menjalankan proses fotosintesis.

.....  
 [1 mark]  
 /1 markah]

- (c) The followings are the steps conducted to investigate the presence of starch in the leaves if photosynthesis takes place.

Berikut adalah langkah-langkah yang dijalankan untuk menyiasat kehadiran karbohidrat di dalam daun jika fotosintesis berlaku.



- (i) What is the structure that is removed from the leaves when the leaves are boiled in alcohol in step 2?

Apakah struktur yang disingkirkan daripada daun apabila daun tersebut dididihkan di dalam alkohol dalam langkah 2?

.....  
[1 mark]  
[1 markah]

- (ii) What can be observed after step 4 is carried out??

Apakah yang boleh diperhatikan selepas langkah 4 dijalankan?

.....  
[1 mark]  
[1 markah]

## Melaka 2011

- (d) Diagram 6.2 shows an aquarium with aquatic plant being placed in the house.  
Rajah 6.2 menunjukkan akuarium yang mengandungi tumbuhan akuatik yang telah diletakkan di dalam rumah.

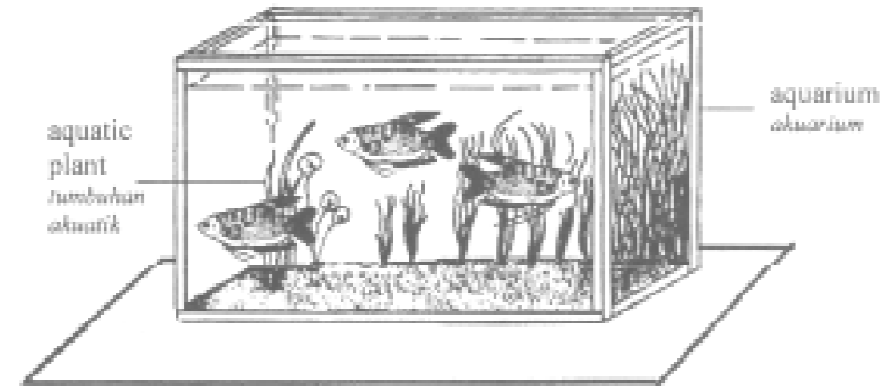


Diagram 6.2  
Rajah 6.2

- (i) Suggest one way to keep the aquatic plant in the aquarium green.  
Cadangkan satu cara untuk mengekalkan kehijauan tumbuhan akuatik di dalam akuarium tersebut.

.....  
[1 mark]  
[1 markah]

- (ii) Give one reason for the answer in 6(d)(i).  
Berikan satu sebab bagi jawapan anda dalam 6(d)(i).

.....  
[1 mark]  
[1 markah]

# MRSM 2011

3 Diagram 3.1 shows the cross section of a human eye.  
Rajah 3.1 menunjukkan keratan rentas mata manusia.

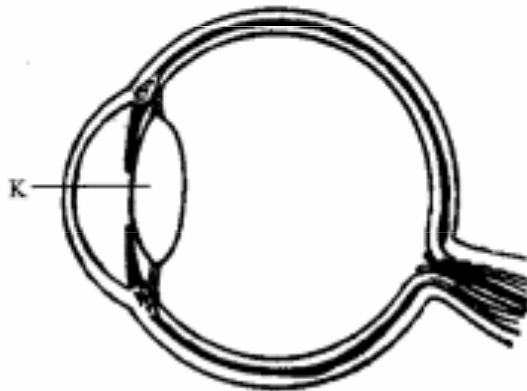


Diagram 3.1  
Rajah 3.1

(a)(i) On Diagram 3.1, label the structure of choroid.  
Pada Rajah 3.1, labelkan struktur koroid.

[1 mark]  
[1 markah]

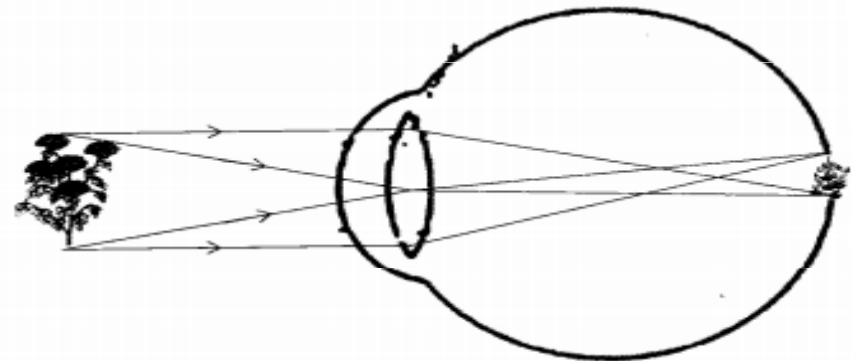
(ii) State the function of choroid.  
Nyatakan fungsi koroid.

[1 mark]  
[1 markah]

(b) State what happens to structure K when a person view distant object.  
Nyatakan apa yang berlaku pada struktur K apabila seseorang melihat objek jauh.

[1 mark]  
[1 markah]

(c) Diagram 3.2 shows the formation of image on the eye of a person with normal vision.  
Rajah 3.2 menunjukkan pembentukan imej pada mata seseorang yang mempunyai penglihatan normal.



Rajah 3.2

(i) State **one** characteristic of the image formed on the retina.  
Nyatakan **satu** ciri bagi imej yang terbentuk pada retina.

[1 mark]  
[1 markah]

(d) Diagram 3.3 shows two animals with different type of vision.  
Rajah 3.3. menunjukkan dua haiwan dengan jenis penglihatan yang berbeza.

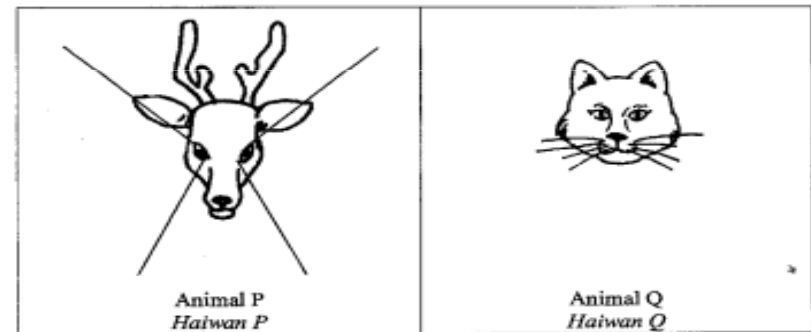


Diagram 3.3  
Rajah 3.3

i) In Diagram 3.3 draw the field of vision for animal Q.  
Dalam Rajah 3.3 lukis medan penglihatan bagi haiwan Q.

[1 mark]  
[1 markah]

ii) Animal P is a prey. How does having the type of vision as shown in Diagram 3.3 help this animal to survive?  
Haiwan P adalah sejenis mangsa. Bagaimanakah jenis penglihatan dalam Rajah 3.3 membantu haiwan ini untuk terus hidup?

46.....  
[1 mark]  
[1 markah]

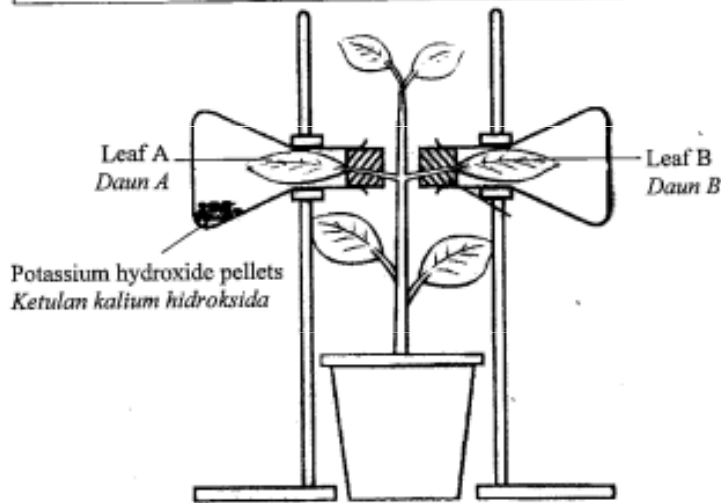
# MRSM 2011

- 5(a) The following are steps in an investigation to study a factor needed for photosynthesis.  
Berikut adalah langkah-langkah untuk mengkaji faktor yang diperlukan bagi fotosintesis.

Step 1: A potted plant is kept in the dark for two days.  
Langkah 1: Satu tumbuhan berpasu disimpan di tempat gelap selama dua hari.

Step 2: The apparatus set-up as shown in Diagram 5.1 is exposed to sunlight for two hours.  
Langkah 2: Susunan radas seperti dalam Rajah 5.1 didedahkan pada cahaya matahari selama dua jam.

Step 3: Leaves A and B are tested for the presence of starch.  
Langkah 3: Daun A dan B diuji untuk kehadiran kanji.



- (i) State the function of potassium hydroxide pellets.  
Nyatakan fungsi ketulan kalium hidroksida.

.....  
[1 mark]  
[1 markah]

- (ii) What is the purpose of keeping the plant in the dark?  
Apakah tujuan menyimpan tumbuhan itu di tempat gelap?

.....  
[1 mark]

- (iii) Based on Step 3, name the solution used to test for the presence of starch.  
Berdasarkan Langkah 3, namakan larutan yang digunakan untuk menguji kehadiran kanji.

.....  
[1 mark]  
[1 markah]

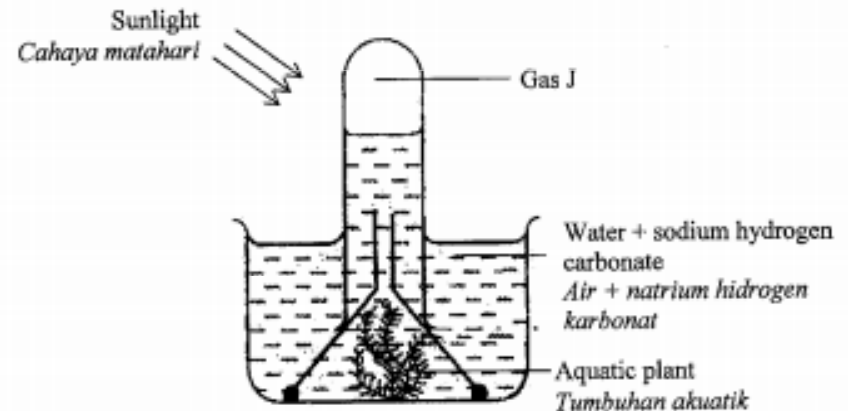
- (iv) In Table 5, record the observation of the experiment.  
Dalam Jadual 5, catatkan pemerhatian bagi eksperimen ini.

Leaf in conical flask Daun dalam kelalang kon	Observation Pemerhatian
A	
B	

Table 5  
Jadual 5

[2 marks]  
[2 markah]

- (b) Diagram 5.2 shows an activity to study the gas released during photosynthesis.  
Rajah 5.2 menunjukkan satu aktiviti untuk mengkaji gas yang dibebaskan semasa fotosintesis.



The apparatus is exposed to sunlight for four hours.  
Radas didedahkan pada cahaya matahari selama empat jam.

- (i) Name gas J.  
Namakan gas J.

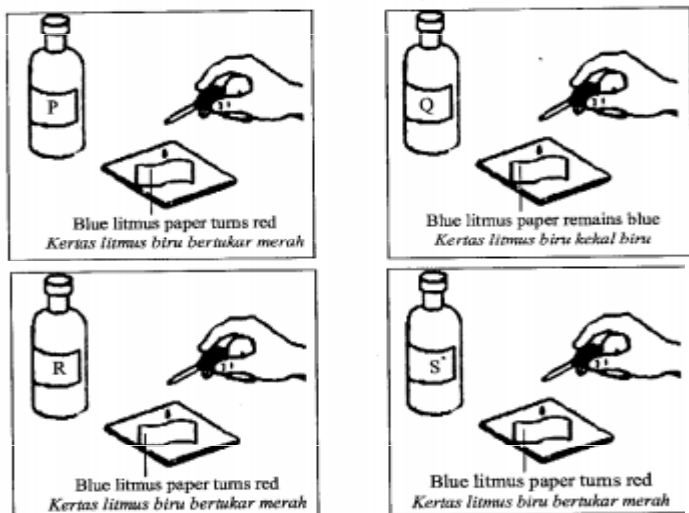
.....  
[1 mark]



## MRSM 2011 CHAPTER 5

7

Diagram 7.1 shows the results of activities to study the properties of solutions P, Q, R and S by using blue litmus paper.  
*Rajah 7.1 menunjukkan keputusan aktiviti untuk mengkaji sifat-sifat larutan P, Q, R dan S dengan menggunakan kertas litmus biru.*



(a) Based on the observations, state the properties of solutions P, Q, R and S.  
*Berdasarkan pemerhatian, nyatakan sifat-sifat larutan P, Q, R dan S.*

Solution <i>Larutan</i>	Properties <i>Sifat-sifat</i>
P	
Q	
R	
S	

[4 marks]  
 [4 markah]

(b) Based on the activities in Diagram 7.1, classify the solution P, Q, R and S into two groups.  
*Berdasarkan kepada aktiviti-aktiviti dalam Rajah 7.1, kelaskan larutan P, Q, R dan S kepada dua kumpulan.*

Classification <i>Pengelasan</i>	Solution <i>Larutan</i>
Blue litmus paper turns red <i>Kertas litmus biru bertukar merah</i>	
Blue litmus paper remains blue <i>Kertas litmus biru kekal biru</i>	

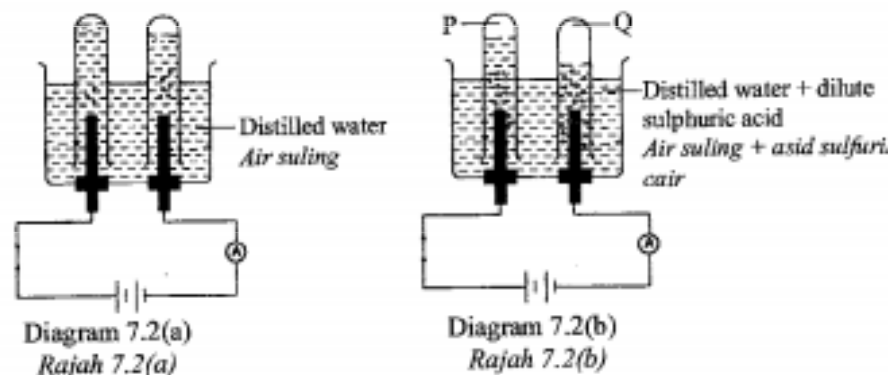
[2 marks]  
 [2 markah]

(c) State the operational definition for acid.  
*Nyatakan definisi secara operasi untuk asid*

.....  
 .....

[1 mark]  
 [1 markah]

(d) Diagram 7.2(a) and 7.2(b) show experiment set-up to study the composition of water.  
*Rajah 7.2(a) dan 7.2(b) menunjukkan susunan radas eksperimen untuk mengkaji komposisi air.*



Based on the observations:  
*Berdasarkan pemerhatian:*

(i) Compare the difference between the volume of gas collected in Diagram 7.2(a) and 7.2(b).  
*Bandingkan perbezaan di antara isipadu gas yang terkumpul dalam Rajah 7.2(a) dan 7.2(b).*

.....  
 .....

[1 mark]  
 [1 markah]

(ii) Write **one** inference about observation in Diagram 7.2(b).  
*Tulis satu inferens mengenai pemerhatian dalam Rajah 7.2(b).*

.....

[1 mark]  
 [1 markah]

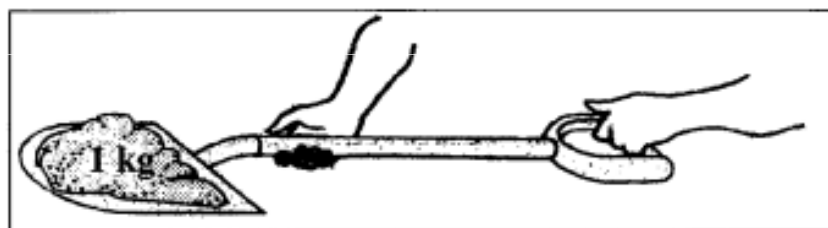
(iii) Based on the Diagram 7.2(b), predict the volume of gas P if volume of gas Q is 2 cm<sup>3</sup>.  
*Berdasarkan pada pemerhatian Rajah 7.2(b), ramalkan isipadu gas P jika isipadu gas Q ialah 2 cm<sup>3</sup>.*

.....

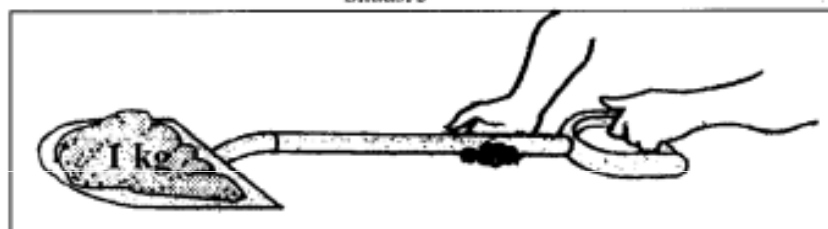
48 [1 mark]  
 [1 markah]

## MRSM 2011 CHAPTER 7

- 8 Diagram 8.1 shows two different situations J and K in lifting soil using spade. *Rajah 8.1 menunjukkan dua situasi berbeza J dan K semasa mengangkat tanah menggunakan penyodok.*



Situation J  
Situasi J



Situation K  
Situasi K

Diagram 8.1  
Rajah 8.1

- (a) Based on the observation in Diagram 8.1:  
*Berdasarkan pada pemerhatian dalam Rajah 8.1:*
- (i) Compare the difference in effort between situation J and situation K.  
*Bandingkan perbezaan daya di antara situasi J dan situasi K.*

[1 mark]  
[1 markah]

- (ii) Write **one** inference about the effort in situation J.  
*Tuliskan satu inferens tentang daya dalam situasi J.*

[1 mark]  
[1 markah]

- (iii) State **one** relationship between effort and effort distance to the fulcrum.  
*Nyatakan satu hubungan antara daya dan jarak daya dengan fulkrum.*

[1 mark]  
[1 markah]

- b) Diagram 8.2 shows apparatus set-up to study the relationship between force and force distance to the fulcrum. *Rajah 8.2 menunjukkan susunan radas untuk mengkaji hubungan di antara daya dan jarak daya ke fulkrum.*

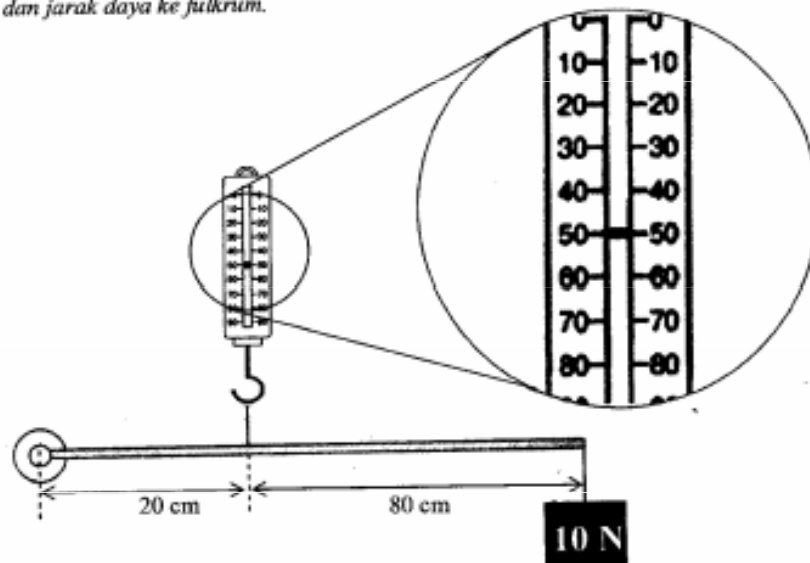


Diagram 8.2  
Rajah 8.2

The experiment is repeated for different distances of force.  
*Experimen diulang dengan jarak daya yang berbeza.*

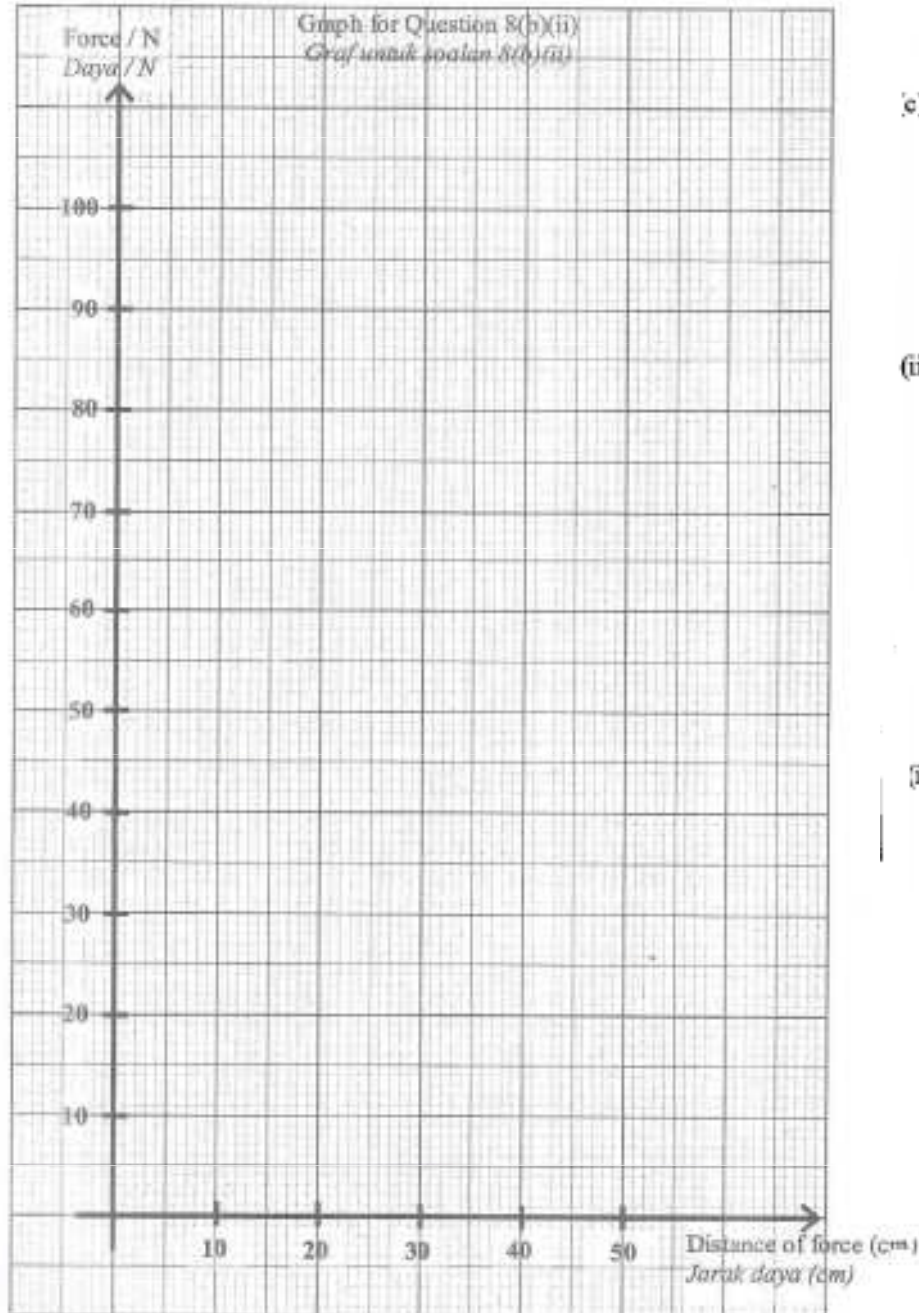
- (i) Based on Diagram 8.2, record the reading of spring balance in Table 8.1.  
*Berdasarkan Rajah 8.2, rekod bacaan neraca spring dalam Jadual 8.1.*

Distance of force (cm) <i>Jarak daya (cm)</i>	Force (N) <i>Daya (N)</i>
10	100
20	.....
30	33
40	25
50	20

Table 8.1  
Jadual 8.1

## MRSM 2011 CHAPTER 7

- (ii) Based on Table 8.1, draw a graph of force against distance of force.  
 Berdasarkan Jadual 8.1, lukiskan graf untuk daya melawan jarak daya.



[2 marks]

- (i) Based on the graph drawn in 8(b)(ii), state **one** hypothesis that can be made from this activity.  
 Berdasarkan graf 8(b)(ii), nyatakan  **satu**  hipotesis yang boleh dibuat daripada aktiviti ini.

.....  
 [1 mark]  
 [1 markah]

- (ii) State the variables involved in this activity.  
 Nyatakan pemboleh ubah yang terlibat dalam aktiviti ini.

Manipulated variable Pemboleh ubah dimanipulasikan	.....
Responding variable Pemboleh ubah bergerak balas	.....

[2 marks]  
 [2 markah]

- (iii) State the operational definition of force.  
 Nyatakan definisi secara operasi bagi daya.

.....  
 [1 mark]

## NEGERI SEMBILAN 2011 CHAPTER 5

- (b) Fogging is widely used to control the mosquito breeding around residential area. Name the physical state of fogs and explain why this method is used.

*Semburan asap digunakan secara meluas untuk mengawal pembiakan nyamuk di sekitar kawasan perumahan. Namakan keadaan fizikal asap dan terangkan mengapa kaedah ini digunakan.*

---



---

[ 2 marks ]  
[ 2 markah ]



Diagram 3.2  
Rajah 3.2

- (c) Diagram 3.2 shows, a glass bottle cracked when water turned to ice. Explain this phenomena in terms of kinetic theory of matter.

*Rajah 3.2 menunjukkan, satu botol kaca pecah apabila air bertukar menjadi ais. Terangkan fenomena ini berdasarkan teori kinetik jirim.*

---



---

[ 2 marks ]  
[ 2 markah ]

(c)



Car S / Kereta S



Car T / Kereta T

Diagram 5.3  
Rajah 5.3

- (i) Compare the stability of car S and car T.  
*Bandingkan kestabilan kereta S dan kereta T.*

---

[ 1 mark ]  
[ 1 markah ]

- (ii) Give one reason for the answer in 5(c)(i).  
*Nyatakan satu sebab bagi jawapan dalam 5(c)(i).*

---

[ 1 mark ]  
[ 1 markah ]

- (d) (i) Complete the equation below.  
*Lengkapkan persamaan di bawah.*

$$\boxed{\phantom{000000}} = \boxed{\text{Force}} \times \boxed{\text{Perpendicular Distance}}$$

*Daya*                      *Jarak serenjang*

[ 1 mark ]  
[ 1 markah ]

- (ii) State one factor which will influence the turning effect of a force produced.  
*Nyatakan satu faktor yang akan mempengaruhi kesan daya yang dihasilkan.*

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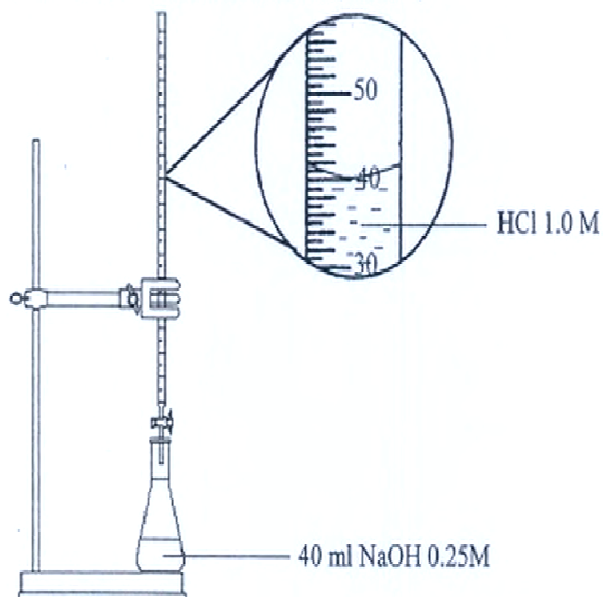
[ 1 mark ]  
[ 1 markah ]



## NEGERI SEMBILAN 2011

- 7 (a) Diagram 7.1 shows the apparatus set up to study the neutralisation between hydrochloric acid, (HCl) and sodium hydroxide solution, (NaOH)

Rajah 7.1 menunjukkan susunan radas untuk mengkaji peneutralan antara asid hidroklorik, (HCl) dan larutan natrium hidroksida, (NaOH).



- (i) Based on the observation in Diagram 7, record the reading of burette L and complete table 7.1.

Berdasarkan pemerhatian dalam Rajah 7, rekodkan bacaan buret L dan lengkapkan Jadual 7.1.

Concentration of hydrochloric acid <i>Kepekatan asid hidroklorik</i>	Initial burette reading (ml) <i>Bacaan awal buret (ml)</i>	Final burette reading (ml) <i>Bacaan akhir buret (ml)</i>	Volume of hydrochloric acid (ml) <i>Isipadu asid hidroklorik (ml)</i>
1.0 M	50	40	10
0.5 M	50	30	20
0.25 M	50		

Table 7.1  
Jadual 7.1

[2 marks]  
[2 markah]

- (ii) State the hypothesis that can be made from this study.

Nyatakan satu hipotesis yang boleh dibuat daripada kajian ini.

[1 mark]  
[1 markah]

- (iii) State the variables involved in this study.

Nyatakan pemboleh ubah-pemboleh ubah yang terlibat di dalam kajian ini.

Manipulated variable <i>Pemboleh ubah dimanipulasi</i>	
Responding variable <i>Pemboleh ubah bergerak balas</i>	

[2 marks]  
[2 markah]

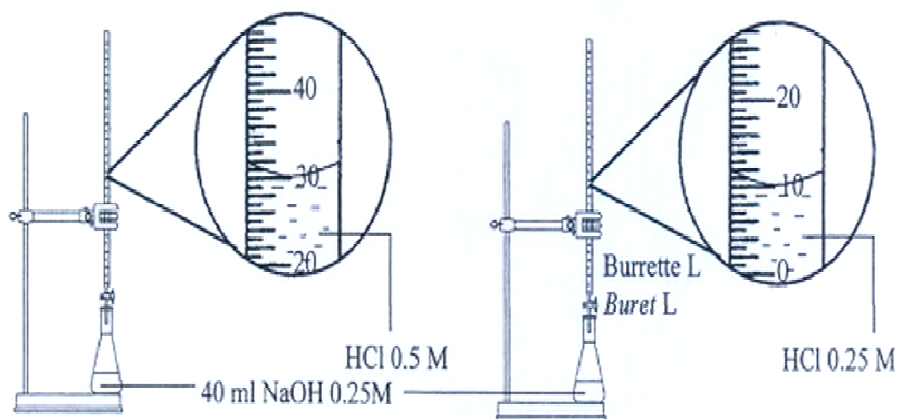


Diagram 7



## NEGERI SEMBILAN 2011

(iv) Table 7.2 shows the changes of common indicator used to detect acids and alkalis.

*Jadual 7.2 menunjukkan perubahan bagi penunjuk yang biasa digunakan untuk mengesan asid dan alkali.*

Type of indicator <i>Jenis penunjuk</i>	Acid <i>Asid</i>	Alkali <i>Alkali</i>	Neutral <i>Neutral</i>
Phenolphthalein <i>Phenolphthalein</i>	Colourless <i>Tidak berwarna</i>	Red <i>Merah</i>	Pink <i>Merah jambu</i>

Table 7.2  
*Jadual 7.2*

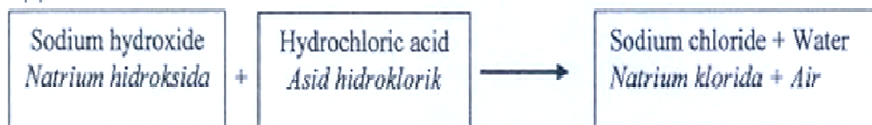
Based on Table 7.2, state the colour of sodium hydroxide solution when excess hydrochloric acid is added to the conical flask.

*Berdasarkan Jadual 7.2, nyatakan warna bagi larutan natrium hidroksida apabila asid hidroklorik berlebihan ditambah ke dalam kelalang kon.*

[ 1 mark ]

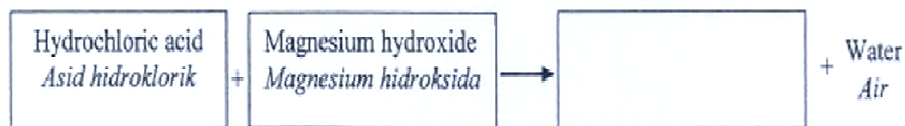
[ 1 markah ]

(b)



Based on the above word equation, complete the word equation below.

*Berdasarkan persamaan perkataan di atas, lengkapkan persamaan perkataan di bawah.*



[ 1 mark ]

[ 1 markah ]

(c) Table 7.3 shows the uses of common acids.

*Jadual 7.3 menunjukkan kegunaan bagi asid biasa.*

Type of Acid <i>Jenis Asid</i>	Uses <i>Kegunaan</i>
A	Vitamin C / <i>Vitamin C</i>
B	Explosive / <i>Bahan letupan</i>

Table 7.3

*Jadual 7.3*

Based on Table 7.3, compare the acidity of acid A and B.

*Berdasarkan Jadual 7.3, bandingkan keasidan bagi asid A dan B.*

---



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[ 1 mark ]

[ 1 markah ]

# NEGERI SEMBILAN 2011

8

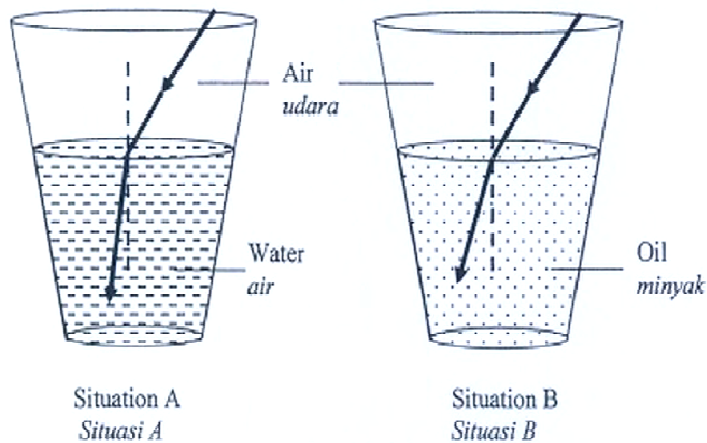


Diagram 8.1  
Rajah 8.1

(a) Based on the observation in Diagram 8.1

Berdasarkan pemerhatian dalam Rajah 8.1.

(i) Compare refraction of light between situation A and B.

Bandingkan pembiasan cahaya di antara situasi A dan B.

---

[ 1 mark ]  
[ 1 markah ]

(ii) State **one** relationship between refraction of light and density of medium.

Nyatakan **satu** hubungan antara pembiasan cahaya dan ketumpatan medium.

---

[ 1 mark ]  
[ 1 markah ]

(iii) Write one inference about the observation in Diagram 8.1.

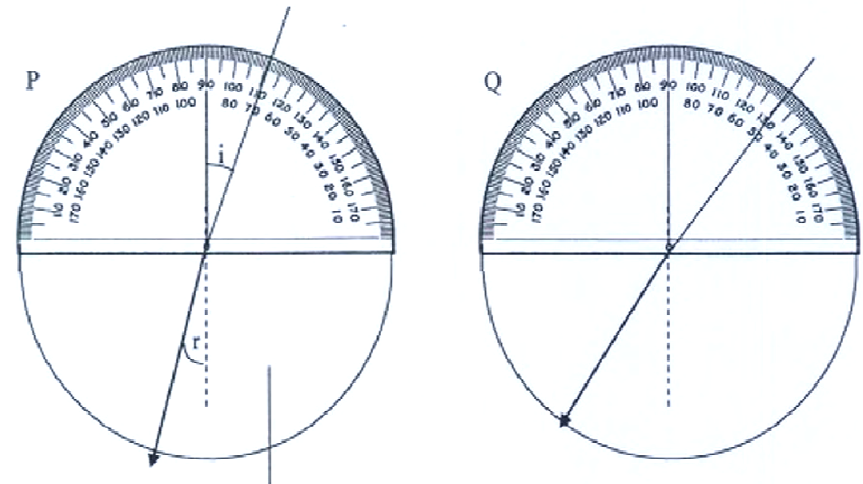
Tulis satu inferens tentang pemerhatian di dalam Diagram 8.1.

---

[ 1 mark ]  
[ 1 markah ]

(b) A student carries out an experiment to study the refraction of light between two medium of different densities. Diagram 8.2 shows **three** readings of the incidence angle,  $i$  and refractive angle,  $r$ .

Seorang pelajar menjalankan satu eksperimen untuk mengkaji pembiasan cahaya di antara dua medium yang berlainan ketumpatan. Rajah 8.2 menunjukkan tiga bacaan bagi sudut tuju,  $i$  dan sudut biasan,  $r$ .



Semicircular glass prism  
Prisma kaca semibulatan

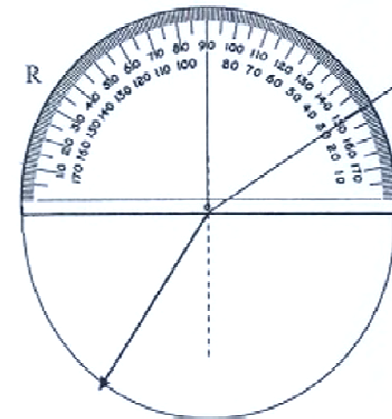


Diagram 8.2  
Rajah 8.2

# NEGERI SEMBILAN 2011

SULIT

55/2

Table 8.1 shows the readings of the protractor P, Q and R

Jadual 8.1 menunjukkan bacaan-bacaan jangka sudut P, Q dan R.

Incidence angle, $i$ ( $^{\circ}$ ) Sudut tuju, $i$ ( $^{\circ}$ )	Refractive angle, $r$ ( $^{\circ}$ ) Sudut biasan, $r$ ( $^{\circ}$ )
20	15
40	25
60	35

Table 8.1  
Jadual 8.1

- (i) Based on Diagram 8.3, state the reading of the refractive angle,  $r$  when incidence angle,  $i = 50^{\circ}$ .

Berdasarkan kepada Rajah 8.3, nyatakan bacaan bagi biasan,  $r$  apabila sudut tuju  $i = 50^{\circ}$ .

$r =$  \_\_\_\_\_  $^{\circ}$

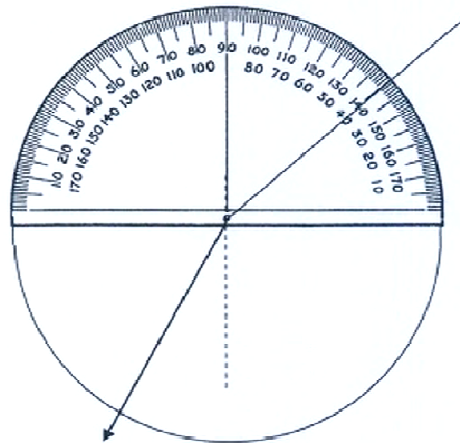


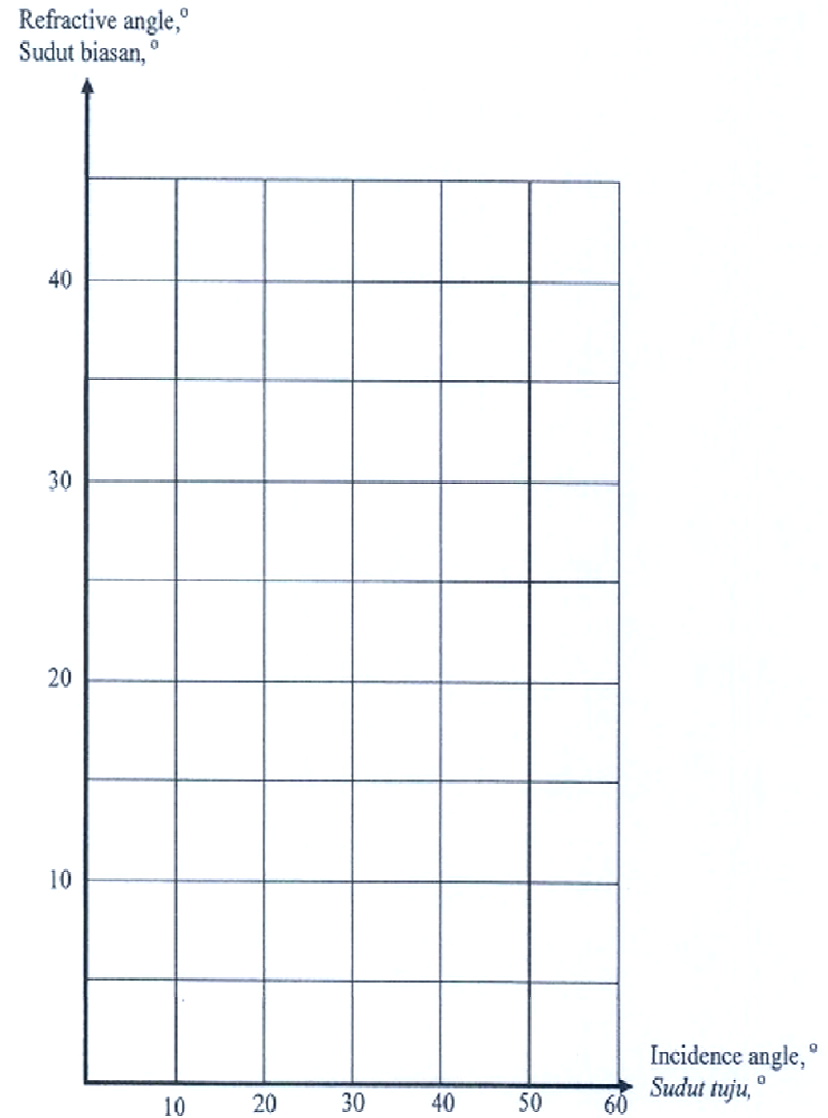
Diagram 8.3  
Rajah 8.3

[ 1 mark ]  
[ 1 markah ]

- (ii) Based on the data in Table 8.1, draw a line graph of the refractive angle,  $r$  against the incidence angle,  $i$ .

Berdasarkan data dalam Jadual 8.1, lukiskan graf garis bagi sudut biasan,  $r$  melawan sudut tuju,  $i$ .

[ 2 marks ]  
[ 2 markah ]



- (iii) Based on the line graph drawn in 8(b)(ii), state **one** relationship between the refraction angle and incidence angle.

Berdasarkan graf garis yang dilukis dalam 8(b)(ii), nyatakan **satu** hubungan antara sudut biasan dan sudut tuju.

---



---

[ 1 mark ]  
[ 1 markah ]

- (iv) State the variable involved in this experiment.

Nyatakan pembolehubah yang terlibat dalam eksperimen ini.

Responding variable <i>Pembolehubah bergerak balas</i>	
Manipulated variable <i>Pembolehubah dimanipulasi</i>	

[ 2 marks ]  
[ 2 markah ]

- (e) Diagram 8.4 shows reflection of light on a plane mirror.

Rajah 8.4 menunjukkan pantulan cahaya pada satu cermin satah.

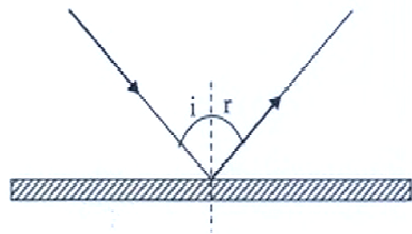


Diagram 8.4  
Rajah 8.4

- (i) State the law of light reflection based on Diagram 8.4.  
Nyatakan hukum pantulan cahaya berdasarkan Rajah 8.4.

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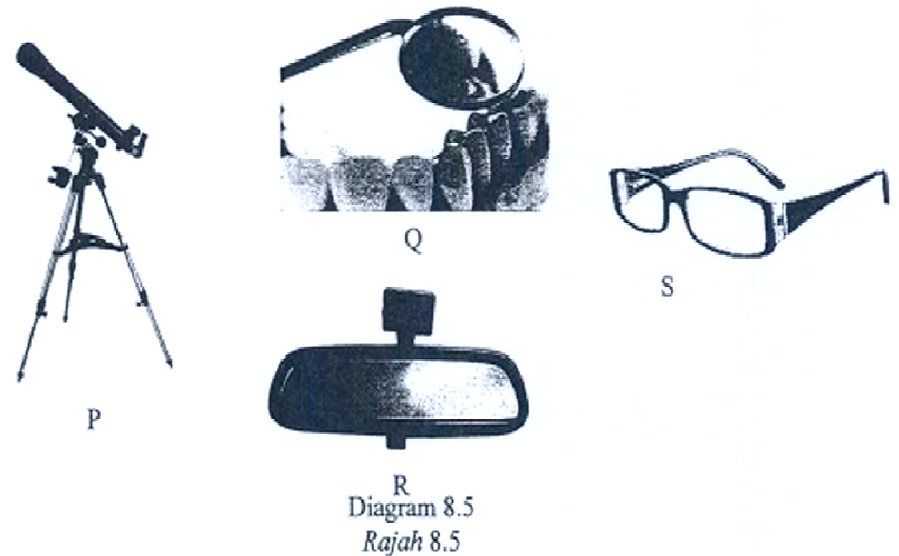
---

[ 1 mark ]  
[ 1 markah ]

- (ii) Diagram 8.5 shows **four** instruments, P, Q, R and S which apply the phenomena of light.

Rajah 8.5 menunjukkan **empat** alatan, P, Q, R dan S yang mengaplikasi fenomena cahaya.

## NEGERI SEMBILAN 2011



Based on Diagram 8.5, classify these instruments based on the light phenomena used to build them.

Berdasarkan Rajah 8.5, kelaskan alat-alat tersebut berdasarkan fenomena cahaya yang digunakan untuk membinanya.

Classification <i>Pengkelasan</i>	Instruments <i>Alatan</i>
Reflection <i>Pantulan</i>	
Refraction <i>Pembiasan</i>	

[ 2 marks ]  
[ 2 markah ]

END OF QUESTION PAPER



# PAHANG 2011 CHAPTER 4

- 3 (a) Diagram 3.0 shows the exchange of substances during the process of photosynthesis.  
*Rajah 3.0 menunjukkan pertukaran bahan ketika proses fotosintesis.*

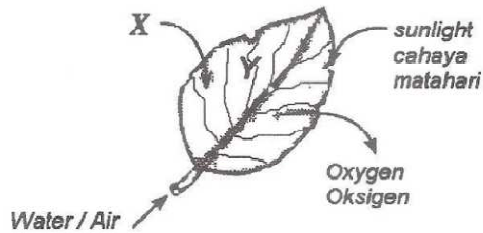
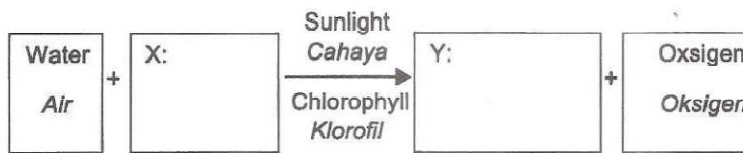


Diagram 3.0  
*Rajah 3.0*

- (i) Complete the word equation for this process.  
*Lengkapkan persamaan perkataan bagi proses ini.*



[2 marks]

- (ii) State one importance of this process.  
*Nyatakan kepentingan proses ini.*

.....  
 [1 mark]

- b) Diagram 3.1 shows an apparatus set up to study one factor that is needed for photosynthesis. Both plants A and B are kept in dark for two days before the experiment. Then apparatus with plants A and B it were placed under the sun for three hours.

*Rajah 3.1 menunjukkan satu susunan radas untuk mengkaji satu faktor yang diperlukan untuk fotosintesis. Sebelum eksperimen dijalankan kedua-dua tumbuhan A dan B diletakkan di tempat gelap selama dua hari dan susunan radas dan tumbuhan a dan B diletakkan di bawah matahari selama tiga jam.*

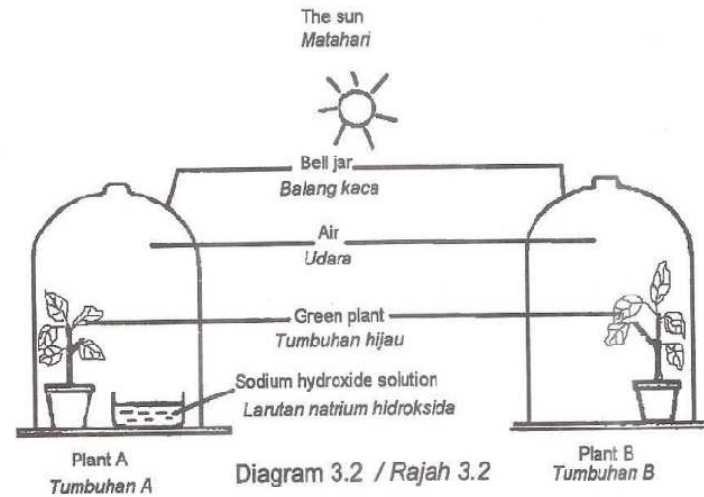


Diagram 3.2 / *Rajah 3.2*

- i) What is the function of sodium hydroxide solution?  
*Apakah fungsi larutan natrium hidroksida?*

.....  
 [1 mark]

- ii) Which plant shows the presence of starch at the end of the experiment?  
*Tumbuhan manakah menunjukkan terdapat kanji di akhir eksperimen ini?*

.....  
 [1 mark]

- iii) Give one reason for the answer in (b)(ii).  
*Berikan satu sebab untuk bagi jawapan anda di (b)(ii)*

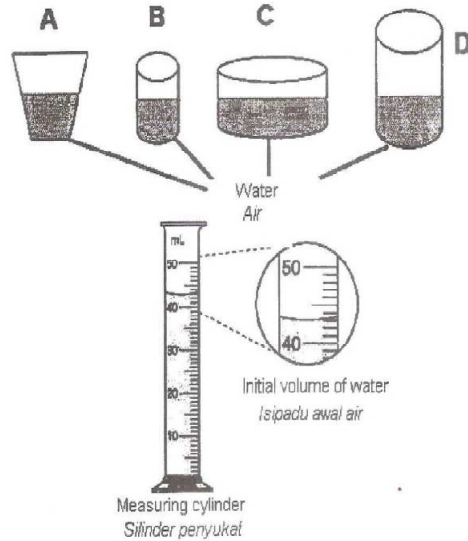
.....57  
 [1 mark]



# PAHANG 2011 CHAPTER 5

7 Diagram 7.0 below shows an experiment to investigate the effect of surface area on the rate of evaporation.

Rajah 7.0 di bawah menunjukkan satu eksperimen bagi mengkaji kesan luas permukaan terhadap kadar penyejatan.



Procedure:  
Prosedur:

- The apparatus are set up as shown in the diagram.  
Susunan radas di susun seperti didalam rajah 7.0
- Four containers with different surface areas are used to investigate the rate of evaporation in water.  
Empat bekas berlainan luas permukaan diguna bagi mengkaji kadar penyejatan air
- The volume of water at the beginning of the experiment is measured and recorded.  
Isipadu air sebelum eksperimen dijalankan disukat dan direkodkan
- After 1 hour, the final volume of water of each container is measured and the rate of evaporation is calculated using a formula.  
Selepas satu jam, bacaan akhir isipadu air disukat dan kadar penyejatan dikira. Dengan menggunakan formula.

(a) (i) Initial reading of water: .....ml  
Bacaan awal isipadu air: ..... ml

[1 mark]

Result:  
Keputusan:

Container Bekas	Rate of evaporation (ml / min) Kadar penyejatan (ml / min)
A	0.20
B	0.10
C	0.25
D	0.16

Table 7.1 / Jadual 7.1

a) (ii) State one inference about the rate of evaporation in container C.  
Nyatakan satu inferens mengenai kadar penyejatan di dalam bekas C.

[1 mark]

(iii) State one hypothesis that can be made from this study.  
Nyatakan satu hipotesis yang boleh dibuat berdasarkan dari kajian ini.

[1 mark]

b) Diagram 7.2 shows containers P,Q,R and S filled with same volume of water. After three hours, the volume of water left in each container is measured.

Rajah 7.2 menunjukkan bekas P,Q,R,S di isi dengan jumlah isipadu air yang sama. Isipadu air yang tertinggal dalam setiap bekas disukat selepas tiga jam.

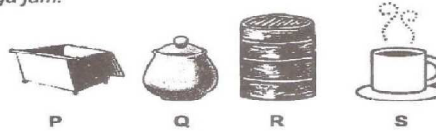


Diagram 7.2 / Rajah 7.2

	Initial volume	Final Volume
P	25 ml	19 ml
Q	25 ml	25 ml
R	25 ml	25 ml
S	25 ml	20 ml

Classify containers P, Q, R and S based on to the ability to evaporate water by writing the alphabets in Table 7.2.

Kelaskan bekas P, Q, R dan S berdasarkan keupayaan bekas untuk menyejat air dengan menulis huruf di dalam Jadual 7.2 ..

Water able to evaporate Air boleh tersejat	Water not able to evaporate Air tidak boleh tersejat

Table 7.2 / Jadual 7.2

[2 marks]

c) Diagram 7.3 shows wet cloths being put out to dry under different conditions.

Rajah 7.3 menunjukkan kain yang basah diletakkan di bawah keadaan berlainan untuk dikeringkan.

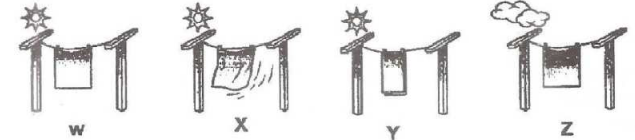


Diagram 7.3 / Rajah 7.3

Conditions Keadaan	Time taken to dry Masa diambil untuk kering
W	20 min
X	12 min
Z	25 min

Based on observations in Diagram 7.3.

Berdasarkan kepada pemerhatian dalam Rajah 7.3

i) State the difference in time taken for cloth to dry in conditions W and X.  
Nyatakan perbezaan masa diambil untuk pakaian kering dalam keadaan W dan X.

[1 mark]

ii) State one inference about the time taken to dry in conditions W and X.  
Nyatakan satu inferen bagi masa diambil untuk kering dalam keadaan W dan X.

[1 mark]

iii) State one inference about the rate of evaporation of water in condition Z.  
Nyatakan satu inferen mengenai kadar sejatan air bagi keadaan Z.

[1 mark]

iv) Predict the rate of evaporation of water in condition Y if the cloth is folded.  
Ramalkan kadar penyejatan di dalam keadaan Y jika kain dilipat.

[1 mark]

State the relationship between condition of cloth and the rate of evaporation of water.

Nyatakan hubungan antara keadaan kain dan kadar sejatan air.

[1 mark]

2 (a) Diagram 2.1 shows the cross section of a human ear.  
Rajah 2.1 menunjukkan keratan rentas telinga manusia.

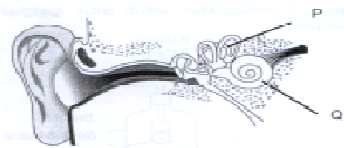


Diagram 2.1  
Rajah 2.1

Name structure P.  
Namakan struktur P.

[1 mark]  
[1 markah]

(b) Draw lines to match structure P and Q with their functions.  
Lukis garisan untuk memadankan struktur P dan Q dengan fungsinya.

Function  
Fungsi

P

To balance our body  
Untuk mengimbangkan badan

To detect vibrations  
Untuk mengesan getaran

Q

To send nerve impulses  
Untuk menghantar impuls saraf

To convert vibrations into nerve impulses  
Untuk menukarkan getaran kepada impuls saraf

[2 marks]  
[2 markah]

(c) Diagram 2.2 shows an activity to investigate the properties of sound. The electric bell is switched on.  
Rajah 2.2 menunjukkan aktiviti untuk mengkaji ciri-ciri bunyi. Loceng elektrik dihidupkan.



Diagram 2.2  
Rajah 2.2

(i) What happens to the sound of the bell when the vacuum pump is switched on?  
Apakah yang berlaku kepada bunyi loceng apabila suis pam vakum dihidupkan?

[1 mark]  
[1 markah]

(ii) The vacuum pump is then switched off and the air flows slowly back into the bell jar.  
Pam vakum dimatikan dan udara memasuki semula ke dalam serkup kaca. Jelaskan apa yang berlaku kepada bunyi loceng.

[2 marks]  
[2 markah]

Diagram 3.1 shows two types of balance, P and Q.  
Rajah 3.1 menunjukkan dua jenis neraca, P dan Q.

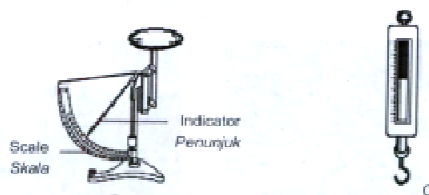


Diagram 3.1  
Rajah 3.1

(a) Name balance P and Q.  
Namakan neraca P dan Q.

P: ..... Q: .....

[1 mark]  
[1 markah]

(b) State the difference between P and Q based on their usage.  
Nyatakan perbezaan antara P dan Q berdasarkan kegunaannya.

[1 mark]  
[1 markah]

(c) Diagram 3.2 shows an activity to measure the mass of sand.  
Rajah 3.2 menunjukkan aktiviti untuk mengukur jisim pasir.

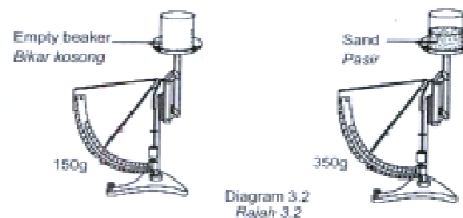


Diagram 3.2  
Rajah 3.2

Calculate the mass of the sand.  
Hitung jisim pasir.



[2 marks]  
[2 markah]

4 Diagram 4 shows an activity to investigate the composition of water.  
Rajah 4 menunjukkan aktiviti untuk mengkaji komposisi air.

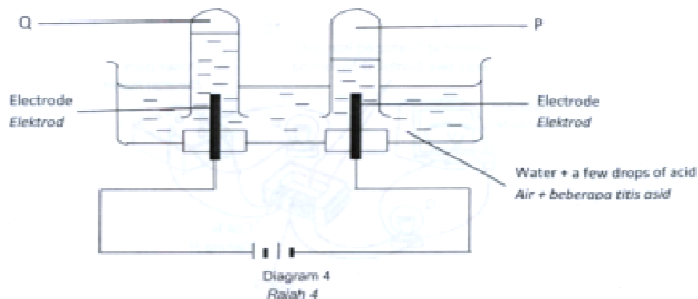


Diagram 4  
Rajah 4

(a) Name the process in Diagram 4.  
Namakan proses dalam Rajah 4.

(b) Explain the importance of adding a few drops of acid to the water.  
Jelaskan kepentingan menambahkan beberapa titis asid ke dalam air.

[1 mark]  
[1 markah]

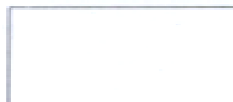
(c) State a suitable test for gas P and Q.  
Nyatakan satu ujian yang sesuai bagi gas P dan Q.

Gas P: .....

Gas Q: .....

[2 marks]  
[2 markah]

(d) Draw and label a molecule of water.  
Lukis dan label satu molekul air.



[2 marks]  
[2 markah]

# Penang 2011 Chapter 5

7 Diagram 7.1 shows the apparatus set-up to study the neutralisation of an acid.  
Rajah 7.1 menunjukkan susunan radas untuk mengkaji peneutralan asid.

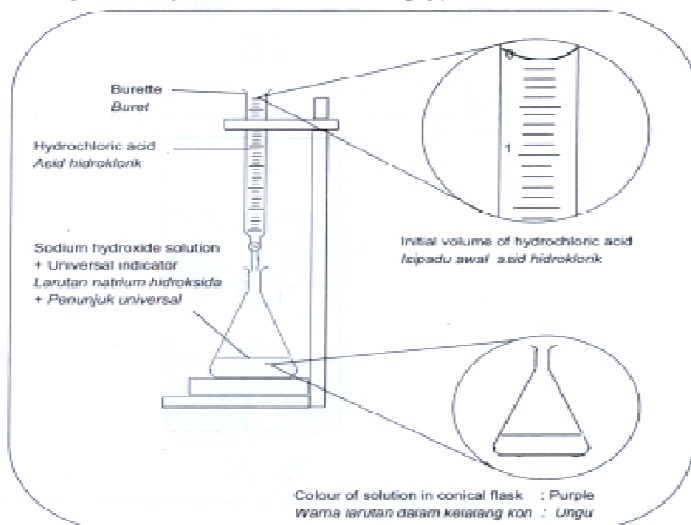


Diagram 7.1  
Rajah 7.1

(a) Diagram 7.2 (a) and (b) shows the volume of hydrochloric acid used in the process and the colour of the solution in conical flask.  
Rajah 7.2 (a) dan (b) menunjukkan isipadu asid hidroklorik yang digunakan dalam proses ini dan warna larutan di dalam kelalang kon.

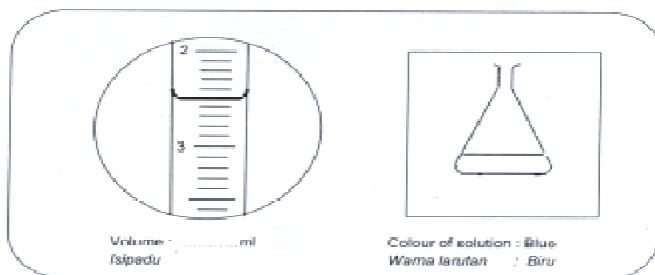


Diagram 7.2 (a)  
Rajah 7.2 (a)

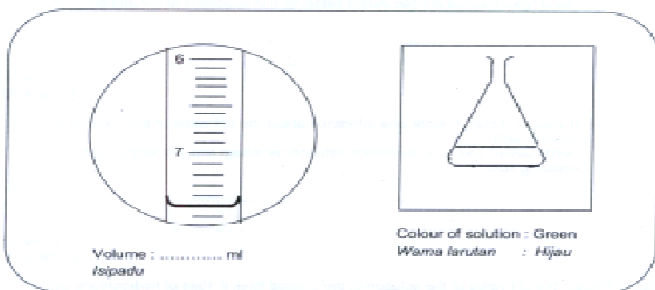


Diagram 7.2 (b)  
Rajah 7.2 (b)

Based on the observation in Diagram 7.2 (a) and (b),  
Berdasarkan pemerhatian pada Rajah 7.2 (a) dan (b),

(i) Record the volume of hydrochloric acid in Diagram 7.2(a) and 7.2(b) into Table 7.  
Rekod isipadu asid hidroklorik dalam Rajah 7.2(a) dan 7.2(b) ke dalam Jadual 7.

Volume of hydrochloric acid used (ml) Isipadu asid hidroklorik yang digunakan (ml)	pH value of solution in the conical flask Nilai pH larutan dalam kelalang kon	Colour of solution in the conical flask Warna larutan dalam kelalang kon
.....	12	Blue Biru
5.0	10	Light blue Biru cerah
.....	7	Green Hijau

Table 7  
Jadual 7

[2 marks]  
[2 markah]

(ii) Compare the colour of the solution in the conical flask when its pH values are 12 and 10.  
Bandingkan warna larutan dalam kelalang kon apabila nilai pH adalah 12 dan 10.

.....  
 .....

[1 mark]  
[1 markah]

(iii) Based on Table 7, state one inference about the pH value of the solution in the conical flask.  
Berdasarkan Jadual 7, nyatakan satu inferens bagi nilai pH larutan dalam kelalang kon.

.....  
 .....

[1 mark]  
[1 markah]

(b) Predict the pH value of the solution in the conical flask if 10ml of hydrochloric acid is added to the solution.  
Ramalkan nilai pH bagi larutan dalam kelalang kon jika 10ml asid hidroklorik ditambah ke dalam larutan itu.

.....  
 .....

60 [1 mark]  
[1 markah]

## Penang 2011 Chapter 5

- (c) State the relationship between the volume of the hydrochloric acid used and the pH value of the solution in the conical flask.  
 Nyatakan hubungan antara isipadu asid hidroklorik yang digunakan dengan nilai pH larutan di dalam kelalang kon.

[1 mark]  
 [1 markah]

- (d) State the variables involved in this experiment.  
 Nyatakan pemboleh ubah yang terlibat dalam eksperimen ini.

Manipulated variable Pemboleh ubah dimanipulasi	
Responding variable Pemboleh ubah bergerak balas	

[2 marks]  
 [2 markah]

- (e) Diagram 7.3 shows the pH value of some substances.  
 Rajah 7.3 menunjukkan nilai pH bagi beberapa bahan.

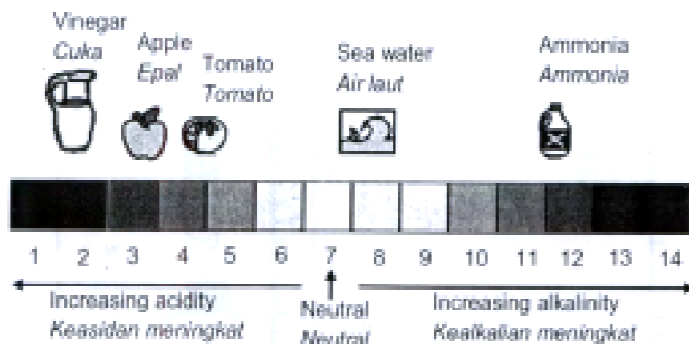


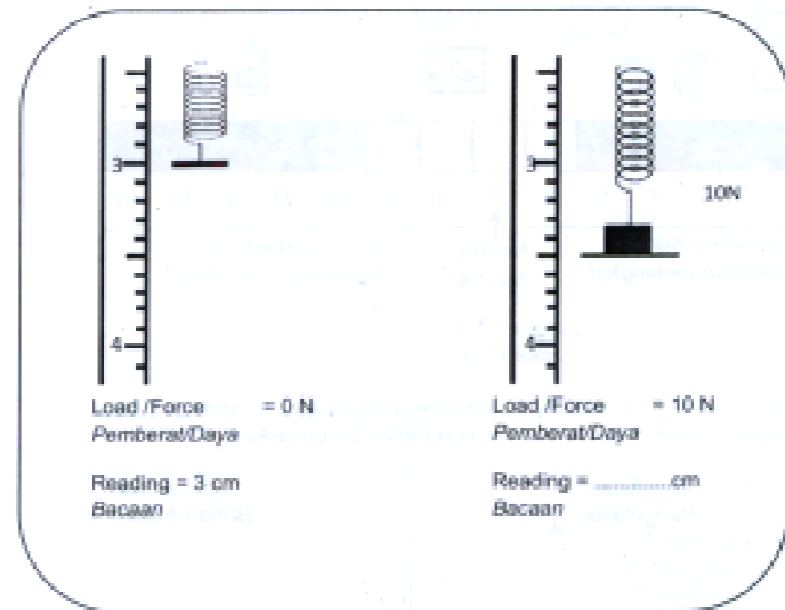
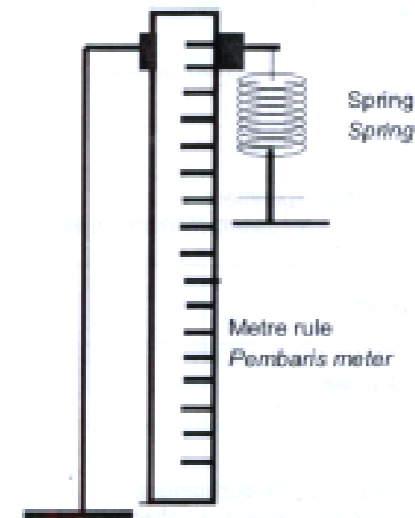
Diagram 7.3  
 Rajah 7.3

Based on Diagram 7.3, classify all the substances based on their pH value.  
 Berdasarkan Rajah 7.3, kelaskan semua bahan berdasarkan nilai pH.

Classification Pengelasan	Substances Bahan-bahan
pH value less than 7 Nilai pH kurang dari 7	
pH value more than 7 Nilai pH lebih dari 7	

[2 marks]  
 [2 markah]

- 8 Diagram 8.1 shows an apparatus set-up to investigate the effect of force on a spring.  
 Rajah 8.1 menunjukkan susunan radas untuk mengkaji kesan daya ke atas spring.



# Penang 2011 Chapter 5

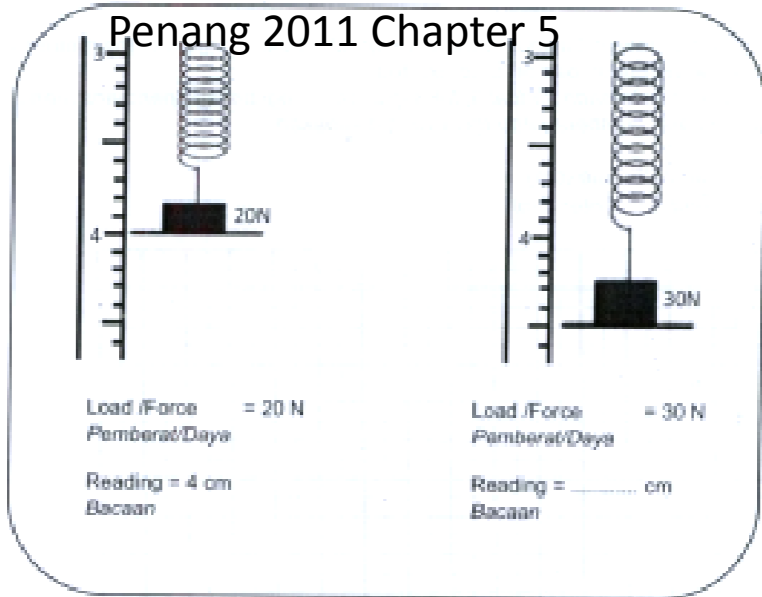


Diagram 8.1  
Rajah 8.1

- (a) Based on the observation in Diagram 8.1, record the readings of the metre rule into Table 8.  
Berdasarkan pemerhatian pada Rajah 8.1, rekod bacaan pembaris meter ke dalam Jadual 8.

Weight of load / Force exerted (N) Berat pemberat / Daya dikenakan (N)	0	10	20	30
Reading of metre rule (cm) Bacaan pembaris meter	3		4	

Table 8.  
Jadual 8.

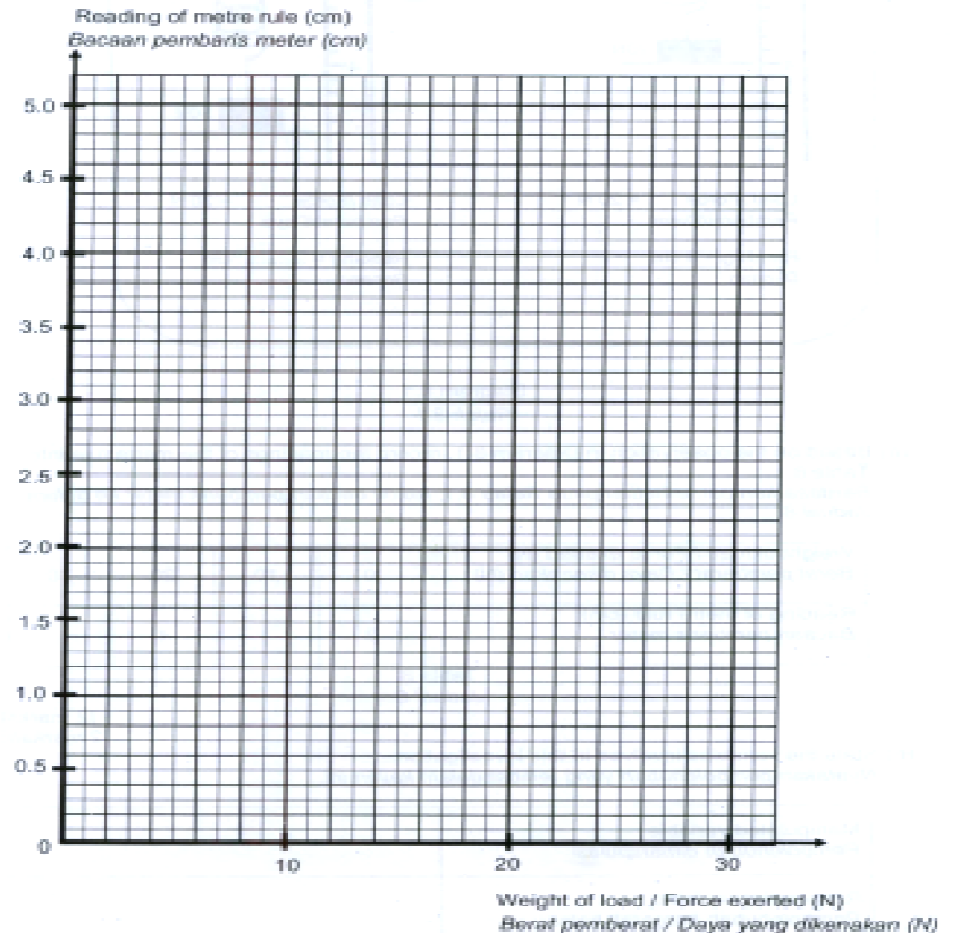
[2 marks]  
[2 markah]

- (b) State the variables involved in this investigation.  
Nyatakan pembolehubah yang terlibat dalam kajian ini.

Manipulated variable Pembolehubah dimanipulasi	
Responding variable Pembolehubah bergerak balas	

[2 marks]  
[2 markah]

- (c) Based on the data in Table 8, draw a line graph of the readings of the metre rule against the weight of load or force exerted.  
Berdasarkan data pada Jadual 8, lukis graf garis bagi bacaan pembaris meter melawan berat pemberat atau daya yang dikenakan.



- (d) State **one** hypothesis that can be made from this investigation.  
Nyatakan **satu** hipotesis yang boleh dibuat daripada kajian ini.

.....  
.....  
[1 mark]  
[1 markah]

- (e) State the operational definition of **force exerted**.  
Nyatakan definisi secara operasi bagi **daya yang dikenakan**.

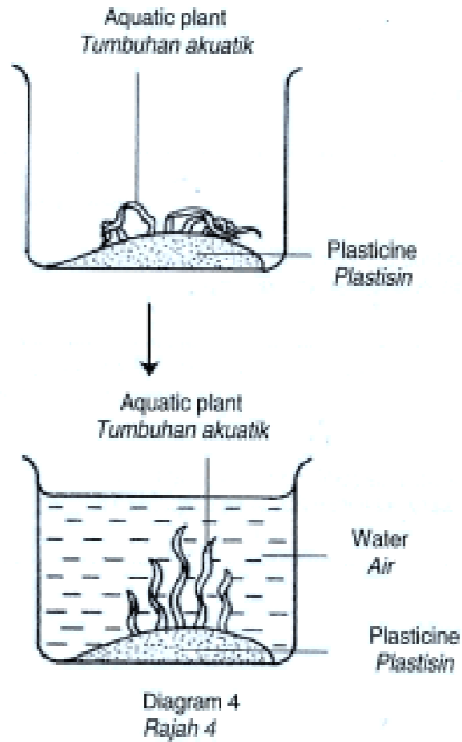
.....  
.....  
[1 mark]  
[1 markah]



# Perlis 2011 Chapter 8

4 Diagram 4 shows an aquatic plant is being placed in an empty beaker. Then, the beaker is filled with some water.

Rajah 4 menunjukkan suatu tumbuhan akuatik diletakkan dalam bikar yang kosong. Kemudian, bikar itu diisi dengan air.



(a) Based on Diagram 4, what can be observed to the aquatic plant after the beaker is filled with water?

Berdasarkan kepada Rajah 4, apakah yang boleh diperhatikan pada tumbuhan akuatik selepas air diisi ke dalam bikar?

.....  
 .....  
 [1 mark]  
 [1 markah]

(b) How aquatic plants are supported in water?

Bagaimanakah tumbuhan akuatik disokong dalam air?

.....  
 .....  
 [1 mark]  
 [1 markah]

(c) Draw a cross-section of the stem of an aquatic plant and label the air sac in the box below.

Lukis keratan rentas batang tumbuhan akuatik dan labelkan pundi udara dalam petak di bawah.



[2 marks]  
 [2 markah]

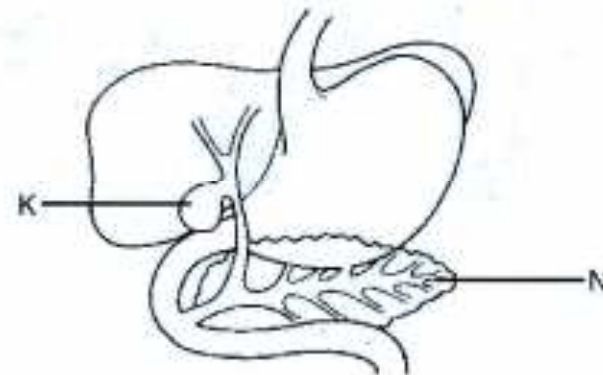
(d) State **two** examples of plant that have the same support system as in (c).  
 Nyatakan **dua** contoh tumbuhan yang mempunyai sistem sokongan yang sama seperti di (c).

1. ....
2. ....

[2 marks]  
 [2 markah]

5 Diagram 5.1 shows some parts of the human digestive system.

Rajah 5.1 menunjukkan sebahagian daripada sistem pencernaan manusia.



- (a) Name the part labelled N in Diagram 5.1.  
*Namakan bahagian bertabel N dalam Rajah 5.1.*

[1 mark]  
 [1 markah]

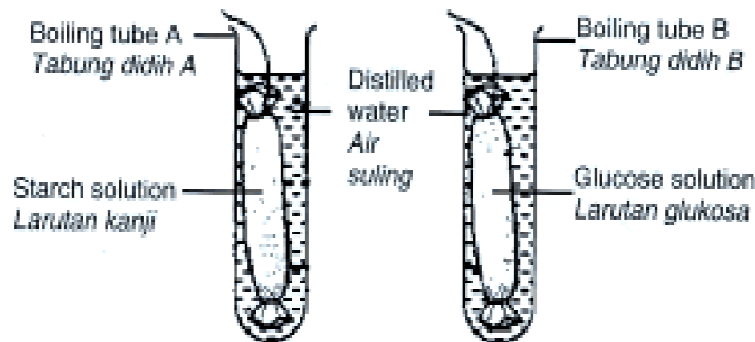
- (b) (i) What substance is stored in organ K?  
*Apakah bahan yang disimpan dalam organ K?*

[1 mark]  
 [1 markah]

- (ii) What will happen to a person if substance in K can not be produced by the liver?  
*Apakah yang akan terjadi kepada seseorang sekiranya bahan di K tidak dapat dihasilkan oleh hati?*

[1 mark]  
 [1 markah]

- (c) Diagram 5.2 shows an activity of the absorption of starch and glucose using a Visking tube.  
*Rajah 5.2 menunjukkan aktiviti penyerapan kanji dan glukosa menggunakan tiub Visking*



- (i) Which part of human digestive system is represented by the Visking tube and water?  
*Bahagian manakah dalam sistem pencernaan manusia yang diwakili oleh tiub Visking dan air?*

Visking tube <i>Tiub visking</i>	
Water <i>Air</i>	

[2 marks]  
 [2 markah]

- (ii) Describe how to test the presence of starch and glucose in boiling tube P and Q.  
*Terangkan bagaimana untuk menguji kehadiran kanji dan glukosa dalam tabung didih P dan Q*

Starch <i>Kanji</i>	
Glucose <i>Glukosa</i>	

[2 marks]  
 [2 markah]

- (iii) Explain what happened to the glucose molecule in Visking tube Q.  
*Terangkan apakah yang terjadi kepada molekul glukosa dalam tiub Visking Q.*

[1 mark]

# Perlis 2011 Chapter 5

8 Diagram 8.1 shows two cups of tea is put with sugar of different sizes.  
*Rajah 8.1 menunjukkan dua cawan teh yang dimasukkan gula yang bertainan saiz.*

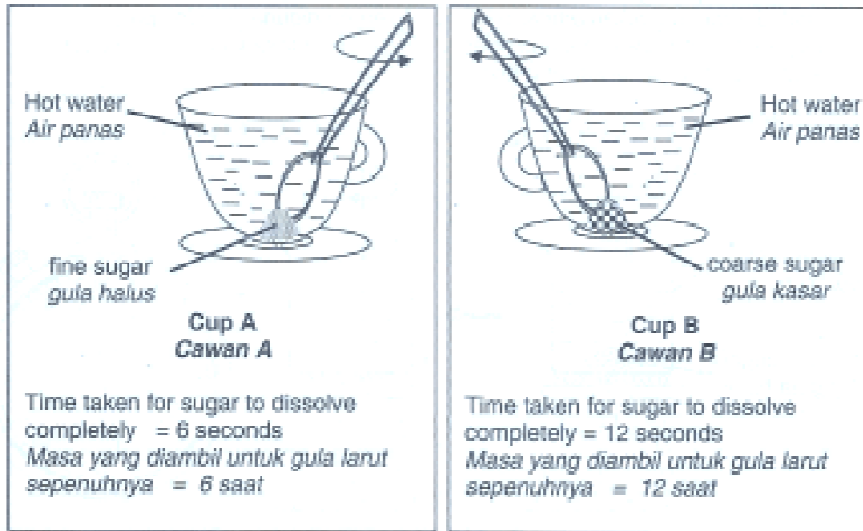


Diagram 8.1  
*Rajah 8.1*

(a) Based on Diagram 8.1,  
*Berdasarkan pada Rajah 8.1*

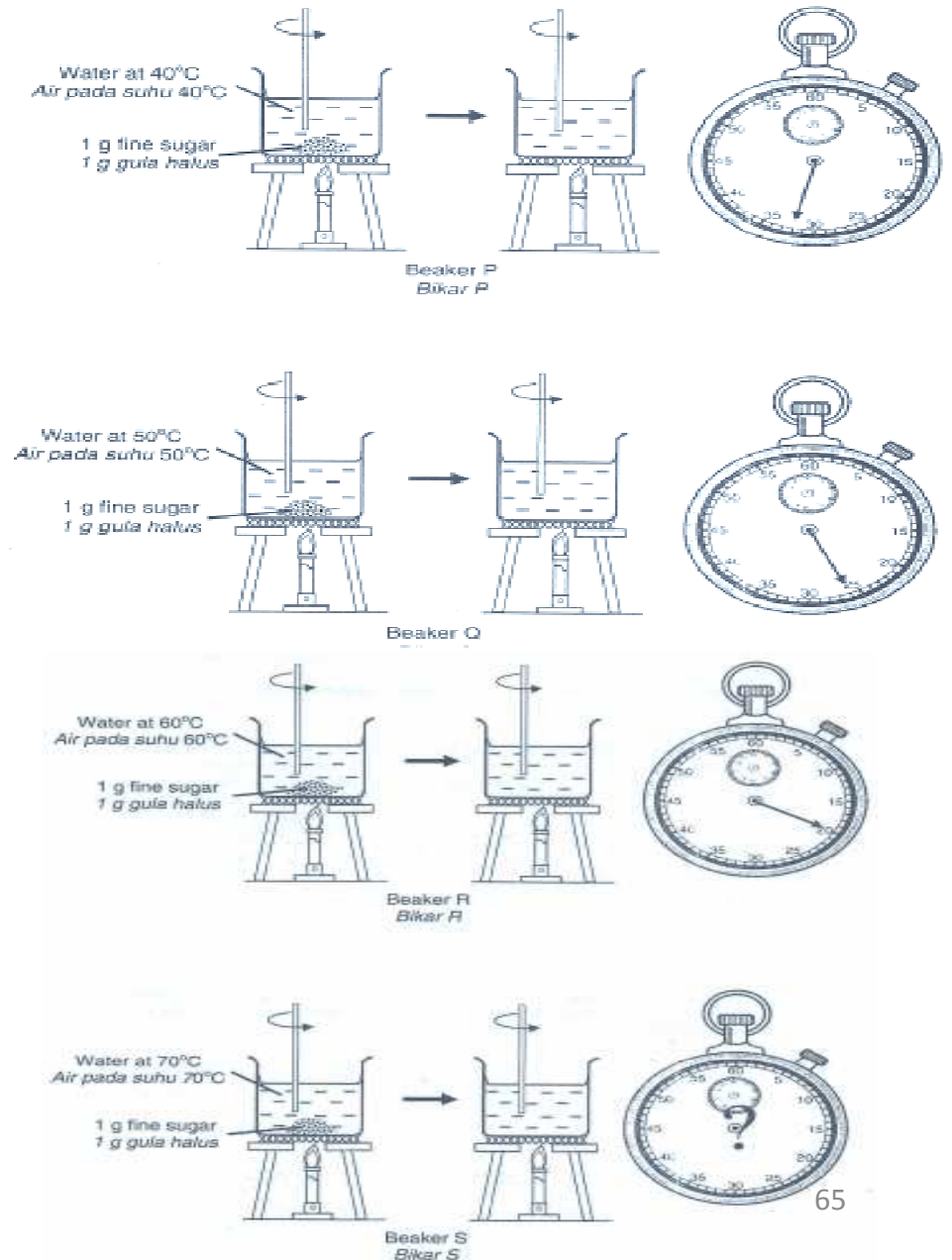
(i) Compare the time taken for sugar to dissolve completely between Cup A and Cup B.  
*Bandingkan masa yang diambil untuk gula larut sepenuhnya antara gula dalam Cawan A dan Cawan B*

.....  
 .....  
 [1 mark]  
*[1 markah]*

(ii) Write one inference about the sugar in Cup A.  
*Tulis satu inferens mengenai gula dalam Cawan A.*

.....  
 .....  
 [1 mark]

(b) Diagram 8.2 shows four similar beakers which are used by the students to investigate the relationship between temperature and time taken for solute to dissolve completely.  
*Rajah 8.2 menunjukkan empat bikar yang serupa digunakan oleh para pelajar untuk mengkaji hubungan antara suhu dan masa yang diambil oleh zat terlarut untuk larut sepenuhnya.*



- (i) In Table 8.3, record the time taken for the fine sugar to dissolve completely in Beaker R.  
 Dalam Jadual 8.3, rekodkan masa yang diambil oleh gula halus untuk larut sepenuhnya dalam Bikar R.

Beaker Bikar	Temperature of water (°C) Suhu air (°C)	Time taken for fine sugar to dissolve completely (s) Masa yang diambil oleh gula halus untuk larut sepenuhnya (s)
P	40	32
Q	50	26
R	60	

Table 8.3  
Jadual 8.3

[1 mark]  
[1 markah]

- (ii) Predict the time taken for fine sugar in Beaker S to dissolve completely.  
 Ramalkan masa yang diambil oleh gula halus dalam Bikar S untuk larut sepenuhnya.

- (c) Based on the graph drawn, write the relationship between the temperature and the time taken for the fine sugar to dissolve completely.  
 Berdasarkan pada graf yang telah diukis, tulis hubungan antara suhu dan masa yang diambil oleh gula halus larut sepenuhnya.

[1 mark]  
[1 markah]

- (d) State the responding variable in this experiment.  
 Nyatakan pembolehubah bergerak balas dalam eksperimen ini.

[1 mark]  
[1 markah]

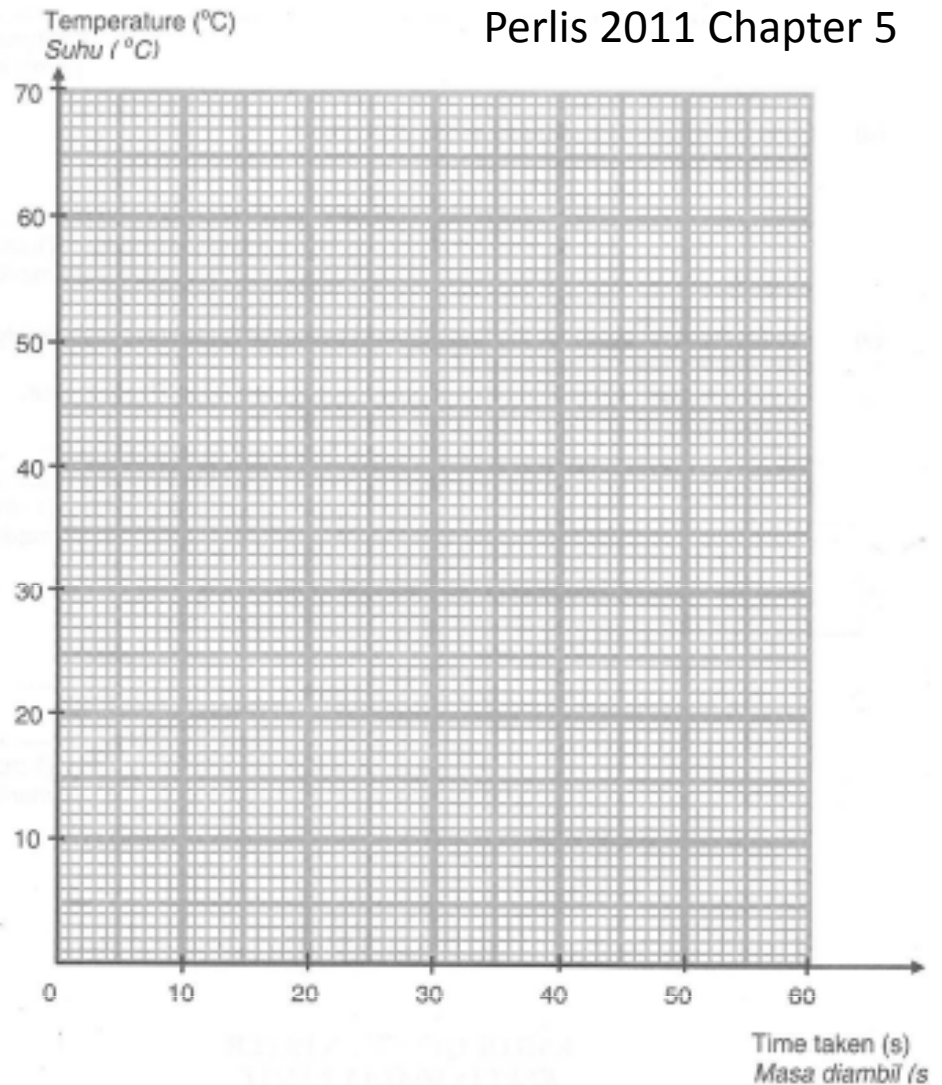
- (e) Predict the time taken for the fine sugar in Beaker P to dissolve completely if cold water is used in that beaker.  
 Ramalkan masa yang diambil oleh gula halus dalam Bikar P untuk larut sepenuhnya jika air sejuk digunakan dalam bikar itu.

[1 mark]  
[1 markah]

- (f) State the operational definition for 'the rate of dissolving'.  
 Nyatakan definisi secara operasi untuk 'kadar keterlarutan'.

[1 mark]

- (iii) Based on the data in Table 8.3, draw a graph to show the relationship between temperature and time taken for the fine sugar to dissolve completely in each beaker.  
 Berdasarkan data dalam Jadual 8.3, lukis graf untuk menunjukkan hubungan antara suhu dan masa yang diambil oleh gula halus untuk larut sepenuhnya dalam setiap bikar.



Perlis 2011 Chapter 5



# Sabah 2011 Chapter 4

4. Diagram 4.1 shows an experiment to study the factor required for photosynthesis. Both plants have been destarched and then left in the sun for three days. *Rejeh 4.1 menunjukkan satu eksperimen untuk mengkaji faktor yang diperlukan bagi fotosintesis. Kedua-dua pokok itu telah dinyahkanji dan dibiarkan dibawah cahaya matahari selama tiga hari.*



Diagram 4.1  
Rejeh 4.1

- (a) (i) State the result of the experiment when one leaf from the plant in bell jars P and Q is tested for starch. *Nyatakan keputusan eksperimen apabila sehelai daun pokok di dalam serkup kaca P dan Q diuji untuk kehadiran kanji.*

[ 1 mark ]  
[ 1 markah ]

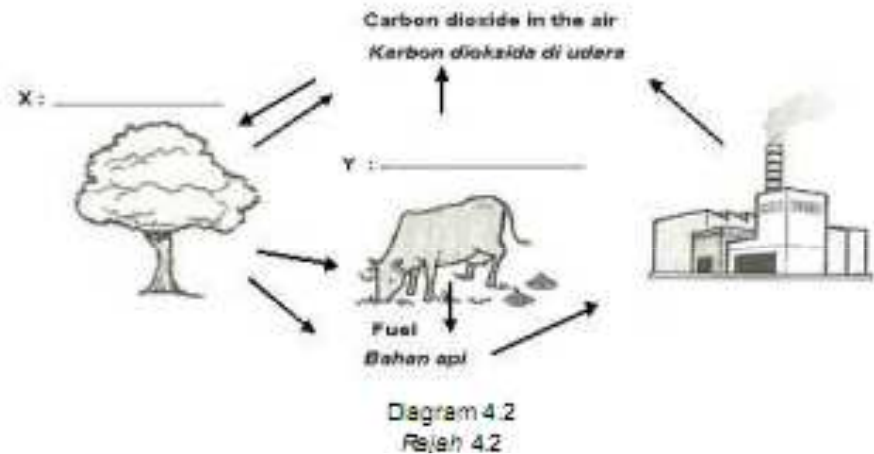
- (ii) Based on the experiment, state one factor needed for photosynthesis. *Berdasarkan eksperimen ini, nyatakan satu faktor yang diperlukan bagi proses fotosintesis*

[ 1 mark ]  
[ 1 markah ]

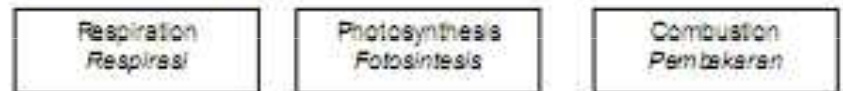
- (iii) Write the word equation for photosynthesis. *Tulis persamaan dalam perkataan untuk fotosintesis.*

[ 1 mark ]

- (b) Diagram 4.2 shows the carbon cycle. *Rejeh 4.2 menunjukkan kitar karbon.*



- (i) Complete the carbon cycle in Diagram 4.2 using processes chosen from the following list. *Lengkapkan kitar karbon dalam Rejeh 4.2 menggunakan proses-proses yang dipilih daripada senarai berikut.*



[ 2 marks ]  
[ 2 markah ]

- (ii) Give one reason why plants are important in the carbon cycle. *Beri satu sebab mengapa tumbuhan adalah penting dalam kitar karbon.*

[ 1 mark ]



# Sarawak 2011 Chapter 1

1. Diagram 1 shows the cross section of a human eye.  
Rajah 1 menunjukkan keratan rentas mata manusia.

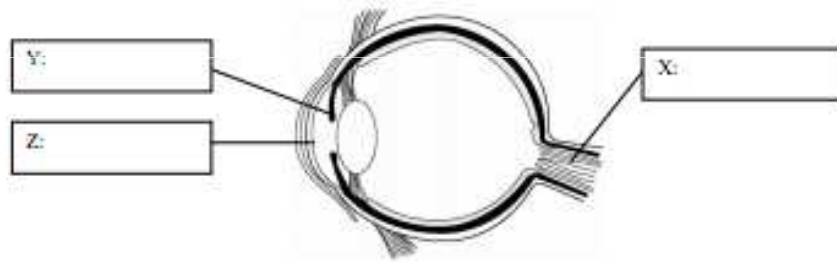


Diagram 1  
Rajah 1

- (a) Name the parts X, Y and Z using the words given in the box below.  
Namakan bahagian-bahagian X, Y dan Z dengan menggunakan perkataan di dalam petak di bawah.

Cornea	Iris	Optic nerve
Kornea	Iris	Saraf optik

[ 3 marks ]

- (b) Draw lines to match the following situations with the conditions of the eyes.  
Lukiskan garisan untuk memadankan situasi berikut dengan keadaan mata.

When we enter a dark room Apabila kita masuk ke bilik yang gelap	●	
When we are looking at a near object Apabila kita melihat objek dekat	●	
When the image of object cannot be detected Apabila imej objek tidak dapat dikesan	●	

[ 3 marks ]

6. Diagram 6 shows a set-up of an apparatus to study the direction and magnitude of friction. The reading on the spring balance is 4N.

Rajah 6 menunjukkan satu set persediaan radas untuk mengkaji arah dan magnitud daya geseran. Bacaan yang tercatat pada neraca spring ialah 4N.

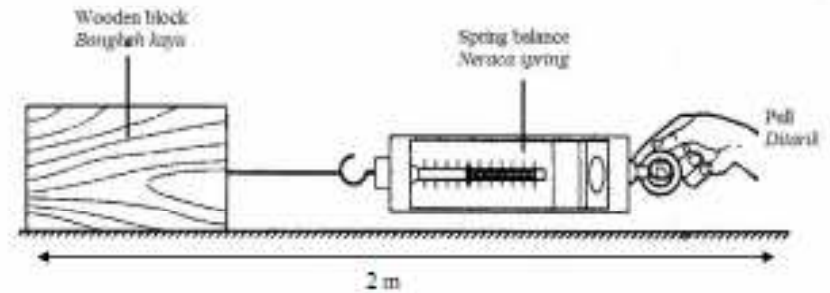


Diagram 6  
Rajah 6

- (a) (i) What is frictional force?  
Apakah daya geseran?

\_\_\_\_\_ [ 1 mark ]  
[ 1 markah ]

- (ii) What is the magnitude of frictional force in this experiment?  
Berapakah magnitud daya geseran dalam eksperimen ini?

\_\_\_\_\_ [ 1 mark ]  
[ 1 markah ]

- (b) State one advantage and one disadvantage of frictional force.  
Nyatakan satu kebaikan dan satu keburukan daya geseran.

Advantage:  
Kebaikan: \_\_\_\_\_

Disadvantage:  
Keburukan: \_\_\_\_\_

[ 2 marks ]

## SBP 2011 Chapter 2

- 5 (a) Diagram 5.1 shows the apparatus set-up to study the absorption of digested food in two boiling tubes, L and M.  
*Rajah 5.1 menunjukkan susunan radas untuk mengkaji penyerapan makanan di dalam dua tabung didih, L dan M.*

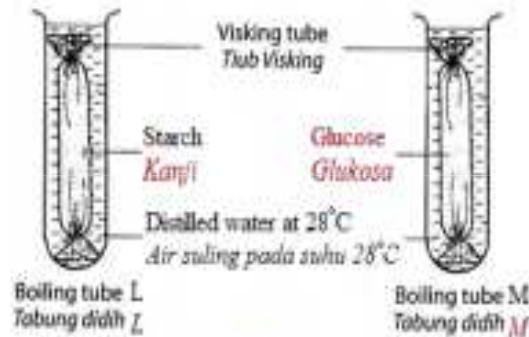


Diagram 5.1  
*Rajah 5.1*

- (i) Write the organ in the human digestive system that is represented by the Visking tube.  
*Tuliskan organ di dalam sistem pencernaan manusia yang diwakili oleh Visking tube.*
- .....  
 [1 mark]  
 [1 markah]
- (ii) State **one** step to increase the efficiency of absorption of digested food in Diagram 5.1.  
*Nyatakan **satu** langkah untuk menambah kecekapan penyerapan makanan dalam Rajah 5.1.*
- .....  
 [1 mark]  
 [1 markah]
- (iii) Compare the absorption of food in boiling tube L and boiling tube M.  
*Bandingkan penyerapan makanan dalam tabung didih L dan tabung didih M.*
- .....

[1 mark]

- (b) Diagram 5.2 shows the apparatus set-up to study the action of saliva on starch solution.

*Rajah 5.2 menunjukkan susunan radas untuk mengkaji tindakan air liur terhadap larutan kanji.*

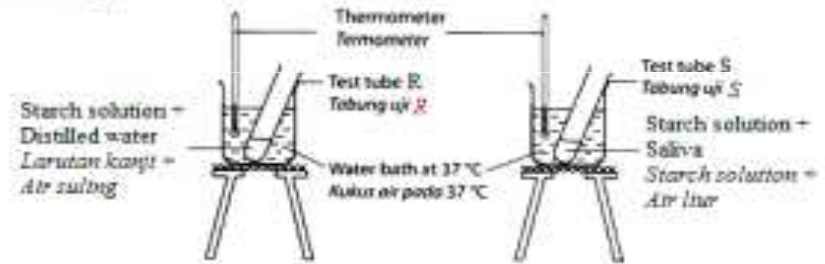


Diagram 5.2  
*Rajah 5.2*

After 30 minutes, the mixture in the test tube is tested with Iodine solution and Benedict's solution. The results of the experiment is shown in Table 5.  
*Selepas 30 minit, campuran dalam tabung uji diuji dengan larutan iodin dan larutan Benedict. Keputusan eksperimen adalah seperti yang ditunjukkan dalam Jadual 5.*

Test tube <i>Tabung uji</i>	Iodine test <i>Ujian Iodin</i>	Benedict's test <i>Ujian Benedict</i>
R	The brown colour of iodine solution remain the same <i>Warna perang larutan iodin tidak berubah</i>	A brick-red precipitate is formed <i>Satu mendakan merah bata terbentuk</i>
S	A blue-black solution is formed <i>Satu larutan biru hitam terbentuk</i>	The blue colour of Benedict's solution remain the same. <i>Warna biru larutan Benedict tidak berubah</i>

Table 5  
*Jadual 5*

Based on the results shown in Table 5, state why there is glucose in test tube R after 30 minutes.

*Berdasarkan keputusan ujikaji dalam Jadual 5, nyatakan mengapa terdapat glukosa di dalam tabung uji R selepas 30 minit.*

.....  
 [1 mark]

SBP 2011 Chapter 2

- (c) Diagram 5.3 shows a structure found in the small intestine.  
Rajah 5.3 menunjukkan struktur yang terdapat di dalam usus kecil.

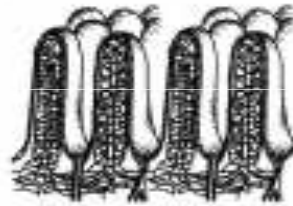


Diagram 5.3  
Rajah 5.3

- (i) Name the structure shown in Diagram 5.3.  
Namakan struktur yang ditunjukkan dalam Rajah 5.3

[1 mark]  
[1 markah]

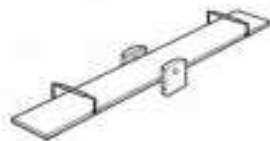
- (ii) State how the small intestine is adapted for the absorption of digested food.  
Nyatakan bagaimana usus kecil diadaptasi untuk penyerapan makanan yang dicernakan.

[1 mark]  
[1 markah]

- (iii) Give one reason for the answer in 5(c)(ii).  
Berikan satu sebab bagi jawapan dalam 5(c)(ii).

[1 mark]

- 6 (a) Diagram 6.1 shows two devices, P and Q, used to simplify work.  
Rajah 6.1 menunjukkan dua jenis alatan P dan Q, yang digunakan untuk memudahkan kerja.



P



Q

Diagram 6.1  
Rajah 6.1

What is the class of lever for both devices?  
Apakah kelas tuas bagi kedua-dua alatan?

[1 mark]  
[1 markah]

- (b) Diagram 6.2 shows a tool used by a plumber.  
Rajah 6.2 menunjukkan sejenis alatan yang digunakan oleh tukang paip.

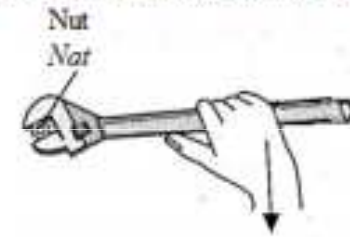


Diagram 6.2  
Rajah 6.2

- (i) Suggest one way to increase the turning effect of a force in Diagram 6.2.  
Cadangkan satu cara untuk meningkatkan kesan putaran daya dalam Rajah 6.2.

[1 mark]  
[1 markah]

- (ii) Give one reason for the answer in 6(b)(i).  
Berikan sebab bagi jawapan di 6(b)(i).

[1 mark]  
[1 markah]

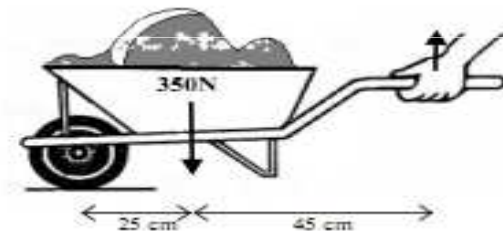
- (iii) State the direction of the moment in Diagram 6.2.  
Nyatakan arah momen daya dalam Rajah 6.2.

[1 mark]  
[1 markah]

- (iv) What is the function of the tool shown in Diagram 6.2?  
Apakah fungsi alat yang ditunjukkan dalam Rajah 6.2?

[1 mark]  
[1 markah]

- (c) Diagram 6.3 shows a wheelbarrow used to lift a 350N load.  
Rajah 6.3 menunjukkan sebuah kereta sorong yang digunakan untuk mengangkat beban seberat 350N.



## Selangor 2011 Chapter 2

- 2 Diagram 2 shows two similar t-shirts hung to dry in different situations.

Rajah 2 menunjukkan dua kemeja-t yang serupa dijemur untuk dikeringkan dalam situasi yang berbeza.

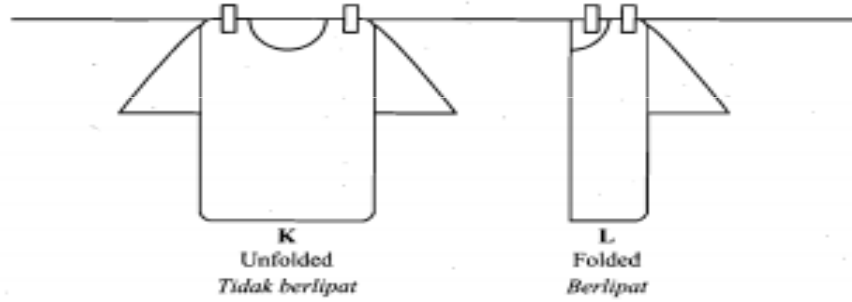


Diagram 2  
Rajah 2

- (a) (i) Which t-shirt will dry first?  
Kemeja-t yang manakah kering dahulu?

[1 mark]  
[1 markah]

- (ii) Give **one** reason for your answer in 2(a)(i).  
Berikan **satu** sebab bagi jawapan anda pada 2(a)(i).

[1 mark]  
[1 markah]

- (iii) Suggest **one** way how to dry the t-shirt faster.  
Cadangkan **satu** cara bagaimana untuk mengeringkan kemeja-t dengan lebih cepat.

[1 mark]

- (b) Mark (✓) **two** correct characteristics about evaporation.  
Tandakan (✓) **dua** ciri yang betul berkenaan penyejatan.

Characteristic Ciri	Mark (✓) Tanda (✓)
It is a slow process Ia merupakan proses yang perlahan	
Takes place at the surface of the liquid Berlaku pada permukaan cecair	
Takes place throughout the liquid Berlaku pada keseluruhan cecair	

[2 marks]  
[2 markah]

- (c) How does boiling differ from evaporation?

Bagaimanakah pendidihan berbeza dari penyejatan?

[1 mark]

- 4 Diagram 4.1 shows an experiment to study the absorption of digested food.

Rajah 4.1 menunjukkan satu eksperimen untuk mengkaji penyerapan makanan tercerna.

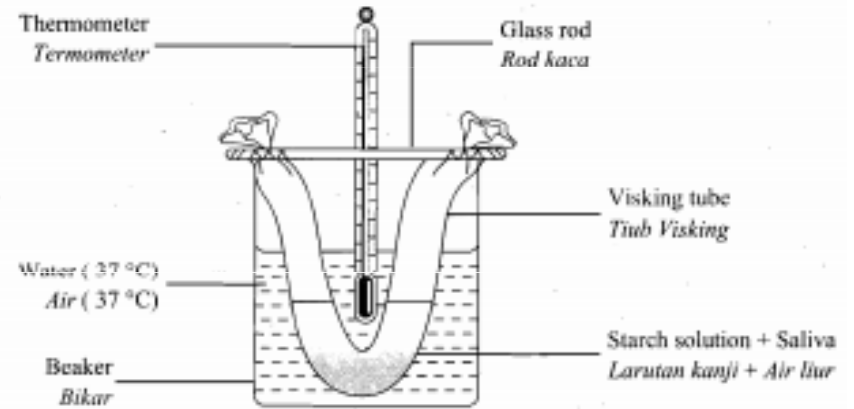


Diagram 4.1  
Rajah 4.1

- (a) What does the visking tube represent in the human digestive system?  
Apakah yang diwakili oleh tiub visking dalam sistem pencernaan manusia?

[1 mark]  
[1 markah]

- (b) Why is the water being kept at 37 °C in this experiment?  
Mengapakah suhu air dikekalkan pada suhu 37 °C dalam eksperimen ini?

[1 mark]  
[1 markah]

- (c) Why is glucose the end product of the experiment?  
Mengapakah glukos menjadi hasil akhir eksperimen?

71

[1 mark]



## Selangor 2011 Chapter 2

(d) Diagram 4.2 shows an organ related to digestion.

Rajah 4.2 menunjukkan suatu organ yang berkaitan dengan pencernaan.



Diagram 4.2  
Rajah 4.2

- (i) If a patient is advised to remove organ P due to a disease, what class of food should he avoid?

Jika seorang pesakit dinasihatkan untuk membuang organ P disebabkan suatu penyakit, apakah kelas makanan yang perlu dielakkan olehnya?

[1 mark]

[1 markah]

- (ii) Give **one** reason for your answer in 4(d)(i).

Beri **satu** sebab kepada jawapan anda di 4(d)(i).

[1 mark]

[1 markah]

- (iii) Table 4 shows 3 menu.

Jadual 4 menunjukkan 3 menu.

Mark (✓) for the most suitable diet for the patient.

Tandakan (✓) untuk diet yang paling sesuai bagi pesakit tersebut.

Menu 1 <i>Menu 1</i>	Menu 2 <i>Menu 2</i>	Menu 3 <i>Menu 3</i>
<ul style="list-style-type: none"> <li>• Fried potatoes <i>Kentang goreng</i></li> <li>• Fried chicken <i>Ayam goreng</i></li> <li>• Noodle <i>Mee</i></li> </ul>	<ul style="list-style-type: none"> <li>• Prawn fritters <i>Cucur udang</i></li> <li>• Fried rice <i>Nasi goreng</i></li> <li>• Carbonated drink <i>Minuman berkarbonat</i></li> </ul>	<ul style="list-style-type: none"> <li>• Steamed fish <i>Ikan kukus</i></li> <li>• Vegetable salad <i>Salad sayuran</i></li> <li>• Fresh milk <i>Susu segar</i></li> </ul>

Table 4

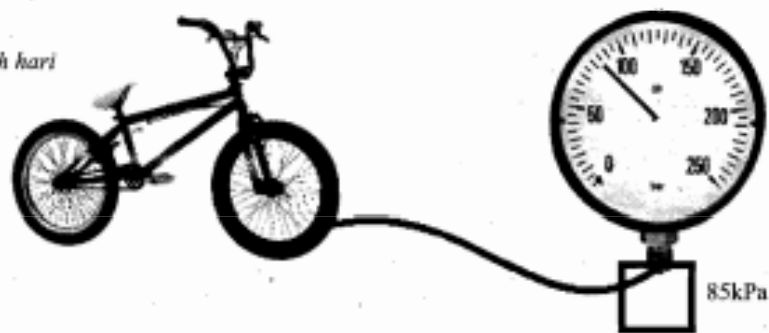
[1 mark]

8 Diagram 8.1 shows the air pressure in two similar bicycles in different situations.

Rajah 8.1 menunjukkan tekanan udara pada dua buah basikal yang serupa dalam situasi yang berbeza.

Noon

Tengah hari

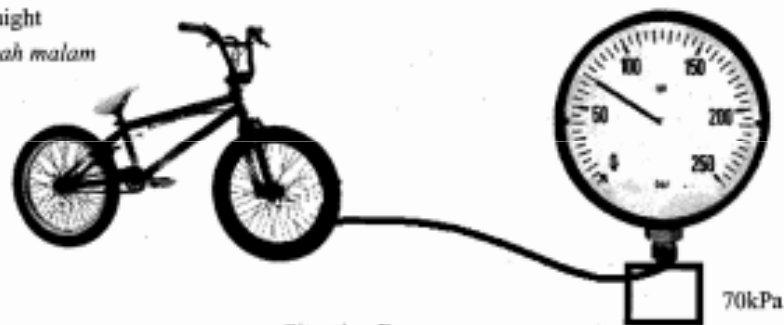


Situation A

Situasi A

Midnight

Tengah malam



Situation B

Situasi B

Diagram 8.1

Rajah 8.1

- (a) Based on the observation in Diagram 8.1:

Berdasarkan pemerhatian pada Rajah 8.1:

- (i) State the difference in air pressure in Situation A and Situation B.  
Nyatakan perbezaan tekanan udara dalam Situasi A dan Situasi B.

72

[1 mark]



## Selangor 2011 Chapter 6

- (ii) Write **one** inference.  
Tulis **satu** inferens.

[1 mark]  
[1 markah]

- (iii) What happen to the air pressure of the tyres at 7.00 p.m.?  
Apakah yang berlaku ke atas tekanan udara tayar pada pukul 7.00 malam?

[1 mark]  
[1 markah]

- (b) Diagram 8.2 shows the Bourdon gauge.  
Rajah 8.2 menunjukkan tolok Bourdon.



Diagram 8.2  
Rajah 8.2

Record the reading of the Bourdon gauge in kPa.  
Rekod bacaan tolok Bourdon dalam kPa.

- (c) Diagram 8.3 shows an apparatus set-up to study the relationship between the air pressure and temperature of water.

Rajah 8.3 menunjukkan susunan radas untuk mengkaji hubungan antara tekanan udara dan suhu air.

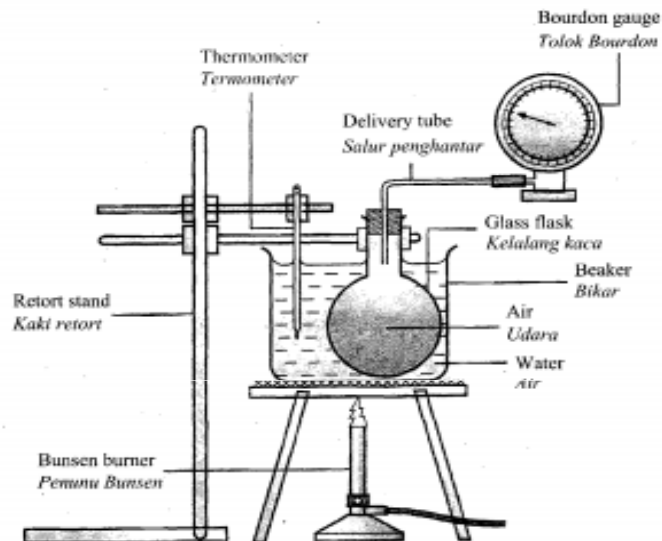


Diagram 8.3

Table 8 shows the reading of Bourdon gauge of the experiment.

Jadual 8 menunjukkan bacaan tolok Bourdon dari eksperimen.

Temperature of water (°C) Suhu air (°C)	Reading of Bourdon gauge (kPa) Bacaan tolok Bourdon (kPa)
50	100
60	110
70	115
80	120
90	130

Table 8  
Jadual 8

- (i) Predict the reading of the Bourdon gauge if the temperature of water is 85 °C.

Ramalkan bacaan tolok Bourdon jika suhu air ialah 85 °C.

[1 mark]  
[1 markah]

- (ii) State the variables involved in this experiment.

Nyatakan pembolehubah yang terlibat dalam eksperimen ini.

Manipulated variables Pembolehubah dimanipulasi	
Responding variables Pembolehubah bergerak balas	

[2 marks]  
[2 markah]

- (iii) State the hypothesis of the experiment.

Nyatakan hipotesis eksperimen ini.

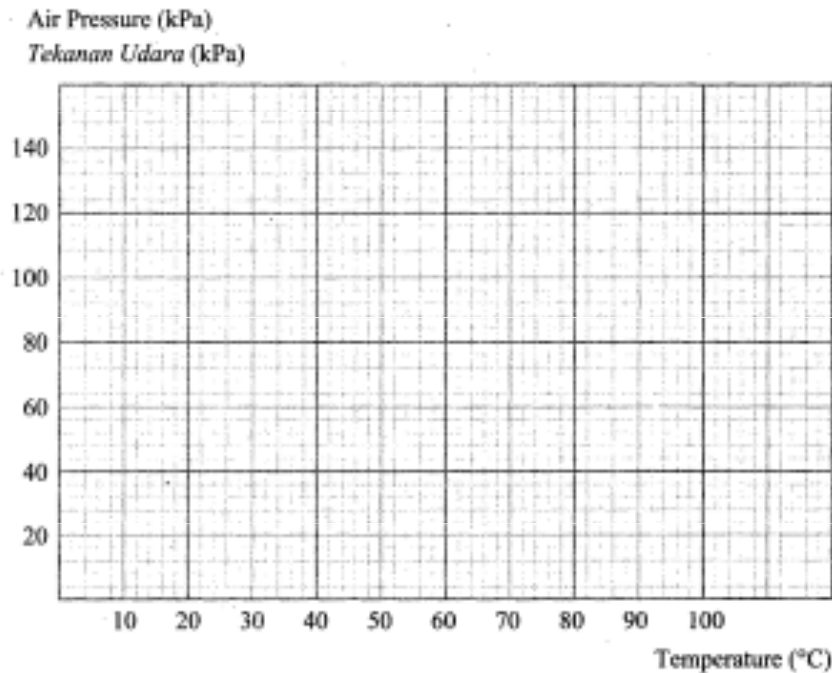
73

[1 mark]

## Selangor 2011 Chapter 6

- (d) Based on the data in Table 8, draw a line graph of air pressure against temperature of water.

Berdasarkan data pada Jadual 8, lukis graf garis bagi tekanan udara melawan suhu air.



- (e) Based on the line graph drawn in (d), state **one** relationship between temperature of water and the air pressure.

Berdasarkan graf garis yang dilukis di (d), nyatakan **satu** hubungan antara suhu air dan tekanan udara.

[1 mark]

[1 markah]

- (f) Based on the experiment, state the operational definition of "air pressure".

Berdasarkan eksperimen tersebut, nyatakan definisi secara operasi bagi "tekanan udara".

[1 mark]

## Terengganu 2011 Chapter 4

- 4 (a) Diagram 6.1 shows a leaf that has been exposed to the sunlight.  
Rajah 6.1 menunjukkan sehelai daun yang telah terdedah pada cahaya matahari.



Diagram 6.1/Rajah 6.1

- (i) On Diagram 6.1, shade the part with blue-black stain when the leaf is tested for the presence of starch.

Pada Rajah 6.1, lorekkan bahagian yang berwarna biru kehitaman apabila ujian kanji dibuat.

[1 mark]

- (ii) State the factor affecting the different stain in the test for starch.

Nyatakan faktor yang mempengaruhi warna yang diperolehi di dalam ujian kanji itu.

[1 mark]

- (b) Diagram 6.2 shows steps in the test for starch.

Rajah 6.2 menunjukkan langkah-langkah dalam ujian kanji.

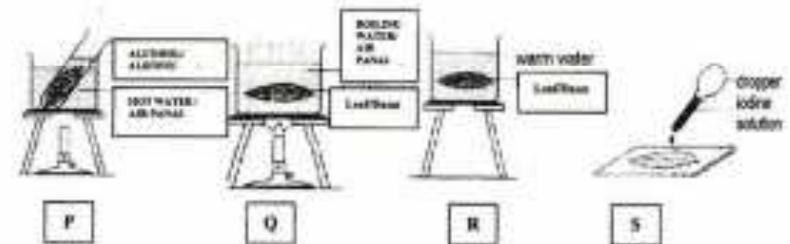


Diagram 6.2 / Rajah 6.2

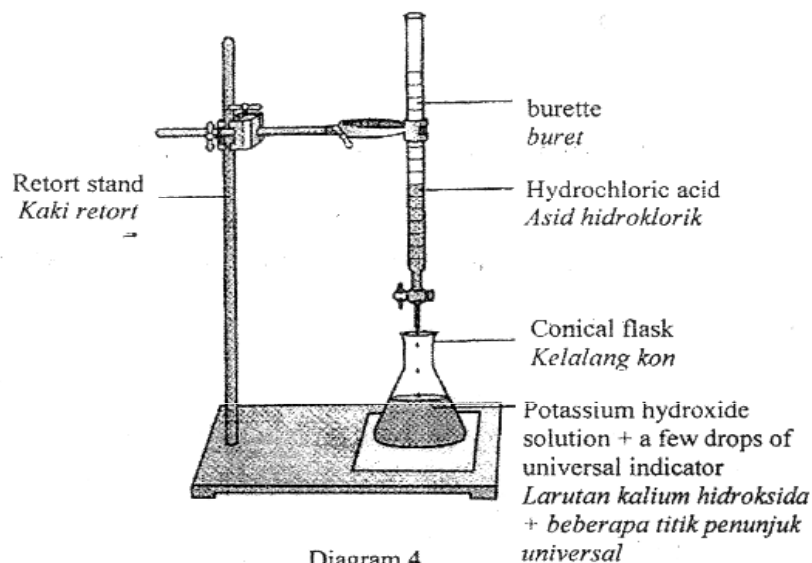
Rearrange the steps into the correct sequence.

Susun semula langkah-langkah tersebut dalam urutan yang betul.

# Wilayah Persekutuan 2011 Chapter 5

Figure 4 shows a burette containing hydrochloric acid and a conical flask containing 25 cm<sup>3</sup> of potassium hydroxide solution.

Rajah 4 menunjukkan satu buret yang mengandungi asid hidroklorik dan kelalang kon mengandungi 25 cm<sup>3</sup> larutan kalium hidroksida.



(a) Name the process that occurs when an acid reacts with an alkali.  
Namakan proses yang berlaku apabila asid bertindak balas dengan alkali.

[1 mark/ markah]

(b) Write a general equation that occurs when an acid reacts with an alkali.  
Tuliskan persamaan am yang berlaku apabila asid bertindak balas dengan alkali.

[1 mark/markah]

(c) What is the colour of the universal indicator at the end-point of the reaction?  
Apakah warna penunjuk universal di akhir tindak balas ini?

[1 mark/markah]

(d) What are the products of this reaction?  
Apakah hasil akhir bagi tindak balas ini?

[1 mark/markah]

(e) State two uses of this process in our daily lives.  
Nyatakan dua kegunaan proses ini dalam kehidupan kita seharian.

- (i) .....
- (ii) .....

[2 marks/markah]

(f) State the pH value of the mixture in the conical flask at the end of the experiment.  
Nyatakan nilai pH campuran dalam kelalang kon pada akhir eksperimen.

[1 mark/markah]

# Wilayah Persekutuan 2011

5. Diagram 5 shows the apparatus set up in an experiment to show the absorption of glucose and starch through a visking tube.  
*Rajah 5 menunjukkan satu eksperimen yang menunjukkan penyerapan glukosa dan kanji melalui tiub visking.*

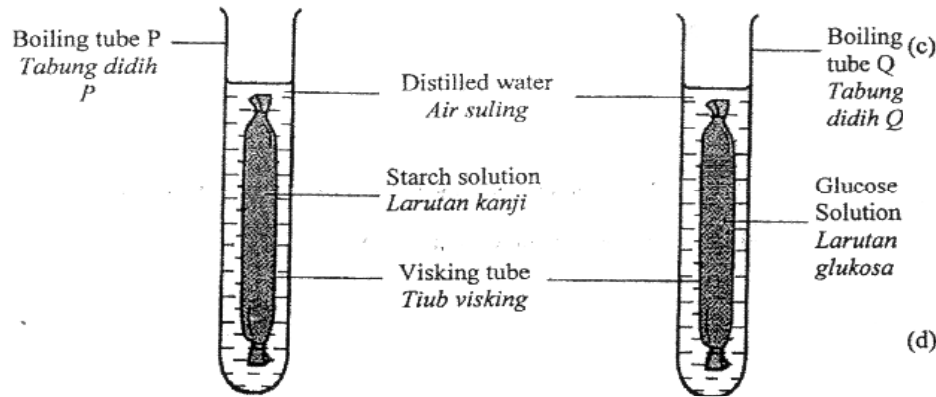


Diagram 5  
*Rajah 5*

In this experiment the distilled water in the boiling tube is tested for starch and glucose before and after 10 minutes. The results of the experiment is in the table below.

*Di dalam eksperimen ini air suling di dalam tabung didih diuji untuk kehadiran kanji dan glukosa pada awal eksperimen dan selepas 10 minit. Keputusan eksperimen dicatat pada jadual di bawah.*

Food <i>Makanan</i>	Beginning of the experiment <i>Awal eksperimen</i>	End of experiment <i>Akhir eksperimen</i>
Starch <i>Kanji</i>	Absent <i>Tidak hadir</i>	.....
Glucose <i>Glukosa</i>	Absent <i>Tidak hadir</i>	.....

- (a) Complete the table above to show the result of end of the experiment by writing 'absent' or 'present'.  
*Lengkapkan jadual di atas bagi keputusan di akhir eksperimen dengan menulis 'hadir' atau 'tidak hadir'.*

[2 marks/ markah]

- (b) Which molecule is able to move through the visking tube?  
*Molekul yang manakah boleh bergerak keluar menerusi tiub visking?*

[1 mark / markah]

- (c) Give your reason for your answer above.  
*Berikan sebab anda bagi jawapan di atas.*

[2 marks / markah]

- (d) Name the process by which substances move through the visking tube.  
*Namakan proses yang membenarkan bahan-bahan keluar melalui tiub visking.*

[1 mark / markah]

Which part of the human digestive system is represented by  
*Bahagian mana di dalam sistem penghadaman diwakili oleh*

- (i) Visking tube : .....  
*Tiub visking*
- (ii) Distilled water : .....  
*Air suling*

[2 marks / markah]