

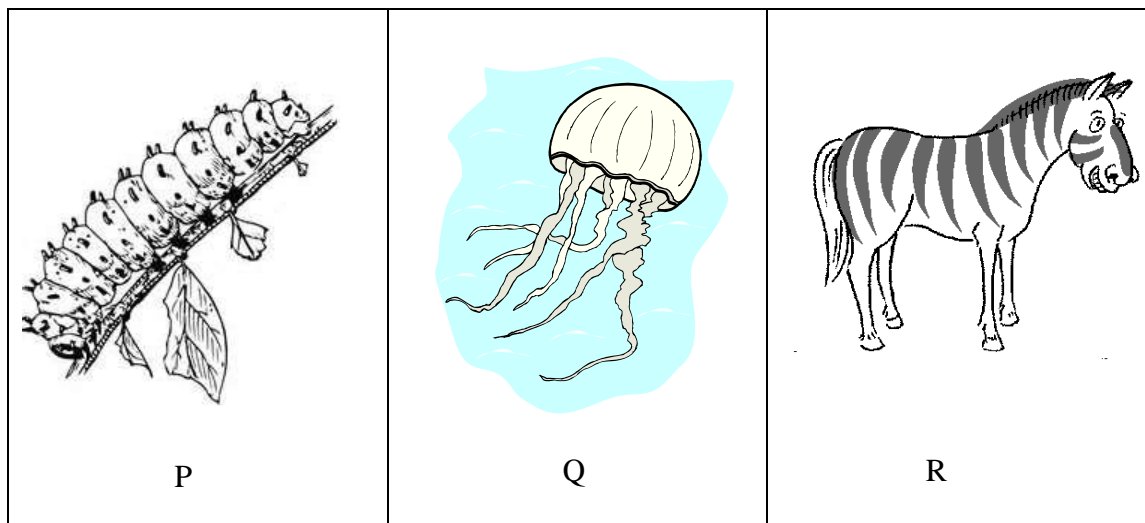
### Section A

[40 marks]

Answer **all** questions.

*Jawab semua soalan*

- 1 Diagram 1 shows three organisms P, Q and R.  
*Rajah 1 menunjukkan tiga organisma P, Q dan R..*



- (a) State the type of **support system** for organisms P, Q and R.  
*Nyatakan jenis **sistem sokongan** pada organisma P, Q dan R*

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

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

R: \_\_\_\_\_

[ 3 marks ]

- (b) Give **two** other example of animals which have the same type of support system with Q.  
*Berikan **dua** contoh haiwan lain yang mempunyai sistem sokongan yang sama dengan Q.*

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

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

[ 2 marks ]

2. Diagram 2 shows the arrangement of particles in substances P, Q and R.  
*Rajah 1 menunjukkan susunan zarah-zarah bahan P, Q dan R.*

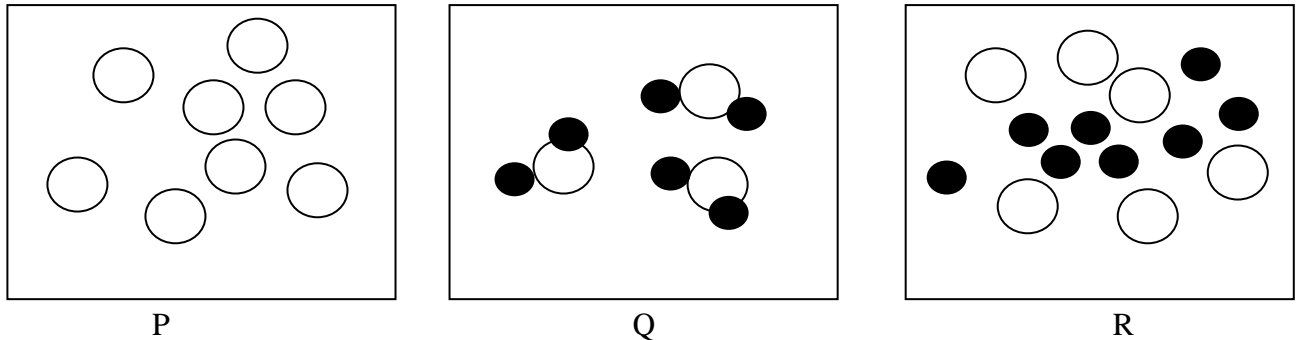


Diagram 2  
*Rajah 2*

(3 marks)

- (a) Name the types of substances shown in Diagram 1 by using the following words.  
*Namakan jenis bahan yang ditunjukkan pada Rajah 1 dengan menggunakan perkataan berikut*

Element <i>Unsur</i>	Compound <i>Sebatian</i>	Mixture <i>Campuran</i>
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- (b) State one method to separate mixture components iron and sulphur.  
*Nyatakan satu kaedah memisahkan komponen dalam campuran besi dan sulfur*

( 1marks )

- ( c ) Suggest **one** method to obtain salt from sea water. Explain your answer.  
*Cadangkan satu kaedah untuk mendapatkan garam daripada air laut.*  
*Terangkan jawapan anda .*

*Method :*

*Kaedah :*

*Explanation :*

*Penerangan :*

( 2 marks )

- 3 Diagram 3 shows Ahmad walking up a staircase.  
*Rajah 3 menunjukkan Ahmad berjalan menaikki tangga.*

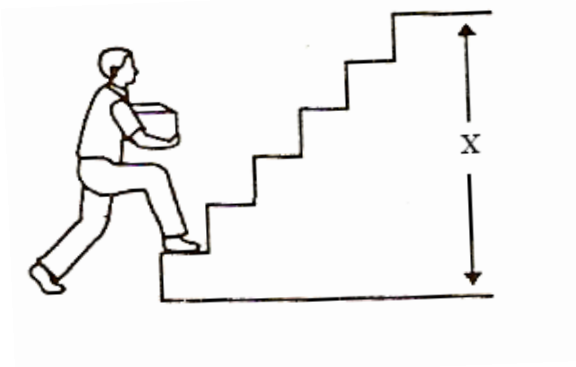


Diagram 3/Rajah 3

- (a) Name two forces acting on Ahmad when he walks up the staircase.  
*Namakan dua daya yang bertindak ke atas Ahmad apabila dia menaikki tangga.*

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

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

[ 2 marks ]

- (b) Ahmad lifts a 100 N load and walk up the stairs with a height of X. If **work done** is 200 J. Calculate the value X. ( Work = Force x Distance )  
*Ahmad mengangkat beban 100 N dan menaikki tangga dengan ketinggian X. Jika **kerja** yang dilakukan ialah 200 J. Kira nilai X ( Kerja = Daya x Jarak)*

[2 mark]

- (c) Aminah who is lifts a 50 N and climbed the same distance up the stairs. What is the work done by Aminah?  
*Aminah mengangkat beban 50 N dan menaikki jarak yang sama di atas tangga tersebut. Apakah kerja yang dilakukan oleh Aminah?*

[2 mark]

4. Diagram 4 shows the apparatus set-up to investigate the composition of water.  
*Rajah 4 menunjukkan radas yang disediakan untuk menguji komposisi air*

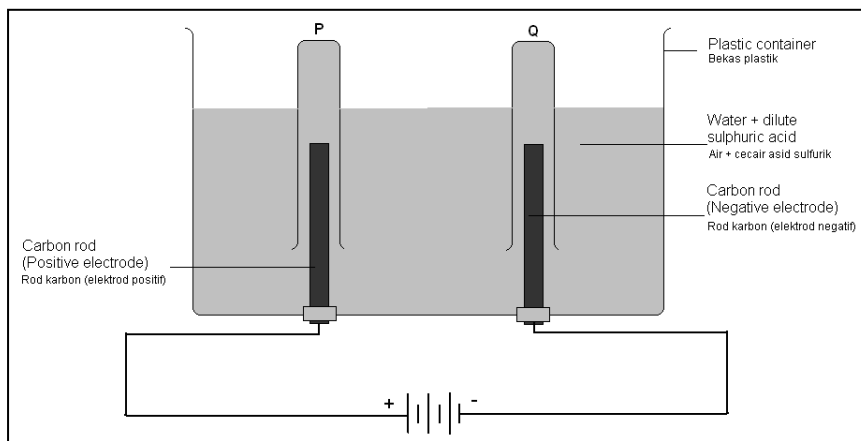


Diagram 4

- (a) State the process shown in Diagram 4.  
*Nyatakan proses yang ditunjukkan dalam Rajah 4*

[1 Mark]

(b) (i) Name the gas collected in test tube P.

*Namakan gas yang terkumpul dalam tabung uji P*

---

(ii) How can you confirm that your answer is correct?

*Bagaimana anda dapat pastikan bahawa jawapan anda itu betul?*

---

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[2 Marks]

(c) (i) Name the gas collected in test tube Q.

*Namakan gas yang terkumpul dalam tabung uji Q*

---

(ii) How can you confirm that your answer is correct?

*Bagaimana anda dapat pastikan bahawa jawapan anda itu betul?*

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[2 Marks]

(d) Explain why water can be separated by process in answer 4(a)

*Terangkan mengapa air boleh diasingkan melalui proses dalam jawapan 4(a)*

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[2 Marks]

5. Diagram 5.1 shows pollination in flowering plants.

*Rajah 5.1 menunjukkan pendebungaan dalam tumbuhan berbunga.*

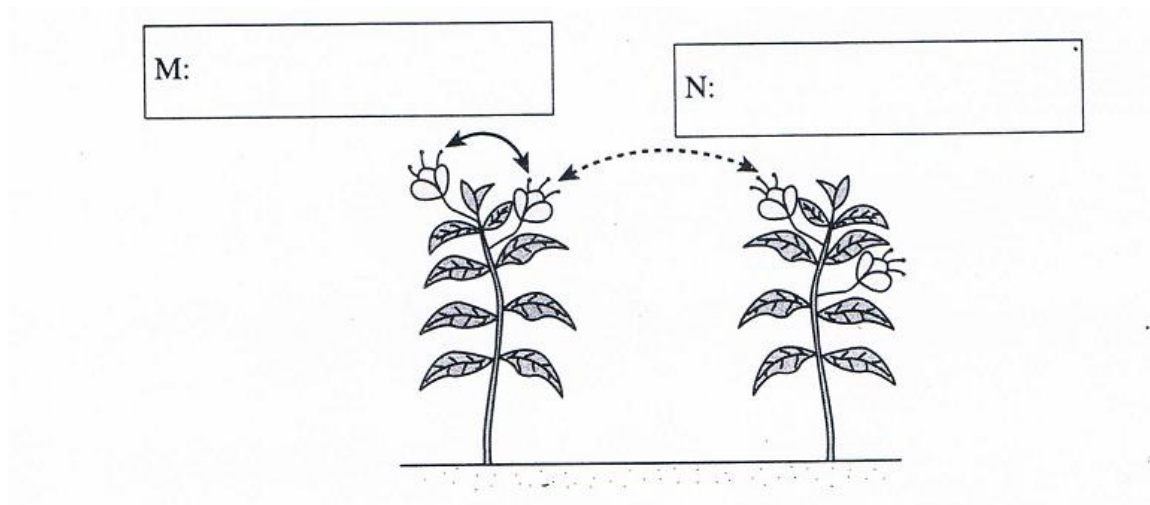


Diagram 5.1

Rajah 5.1

- (a) (i) What is pollination?  
*Apakah pendebungaan?*

.....  
[1 mark]

- (ii) In Diagram 5.1, label the types of pollination M and N in the box provided.  
*Dalam Rajah 5.1, label jenis-jenis pendebungaan M dan N dalam petak yang disediakan.*

[2 mark]

- (b) State two advantages of the type of pollination N compared to type of pollination M.  
*Nyatakan dua kebaikan bagi jenis pendebungaan dalam Rajah N berbanding jenis pendebungaan M.*

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

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

[2 mark]

- (c) Diagram 5.2 shows two types of flowers, P and Q.  
*Rajah 5.2 menunjukkan dua jenis bunga, P dan Q.*

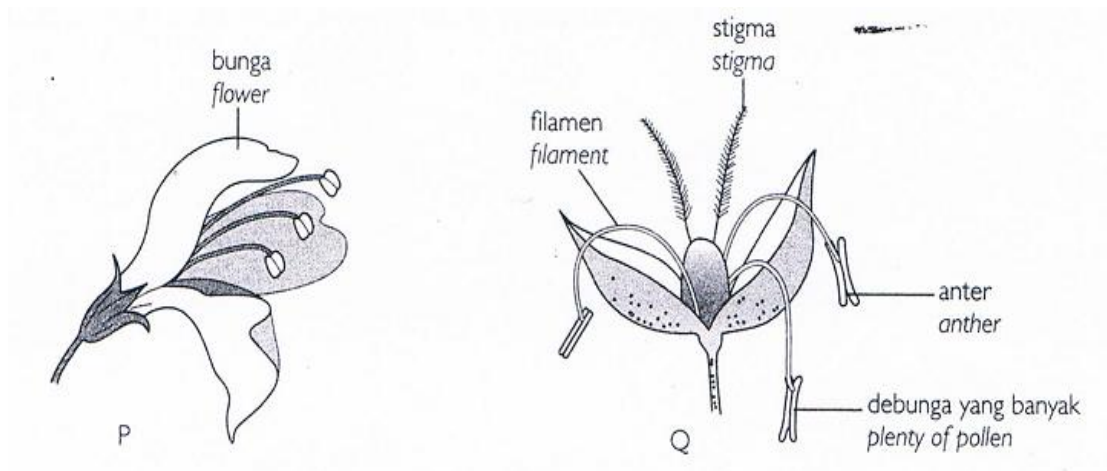


Diagram 5.2  
*Rajah 5.2*

- (i) Name one pollinating agent for each flower.  
*Namakan satu agen pendebungaan bagi setiap bunga tersebut.*

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

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

[2 marks]

- (ii) State one difference between flower P and flower Q  
*Nyatakan satu perbezaan antara bunga P dengan bunga Q*

\_\_\_\_\_

\_\_\_\_\_

[1 marks]

6. Diagram 6.1 shows a magnet field on the bar magnet.

*Rajah 6.1 menunjukkan satu medan magnet bar.*

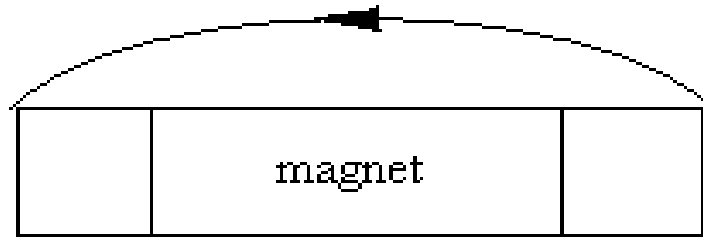


Diagram 6.1

*Rajah 6.1*

Based on the diagram 6.1

*Berdasarkan rajah 6.1*

- (a) (i). On the diagram, label the North (N) and south (S) in the boxes

*Dalam gambarajah, tandakan kutub Utara (N) dan kutub selatan (S) dalam petak yang disediakan*

[1 mark]

- (ii) State the area where the magnetic field is the strongest

*Nyatakan kawasan medan magnet yang paling kuat*

.....

[1 mark]

- (iii) Give the reason for your answer in (ii)

*Beri alasan kepada jawapan anda di (a) (ii)*

.....

.....

[1 mark]



- (b) Diagram 6.2 shows an experiment to investigate the magnet field formed from a straight wire when the current flow through it.

*Rajah 6.2 menunjukkan satu eksperimen untuk mengkaji medan magnet yang terhasil melalui seutas dawai lurus oleh pengaliran arus.*

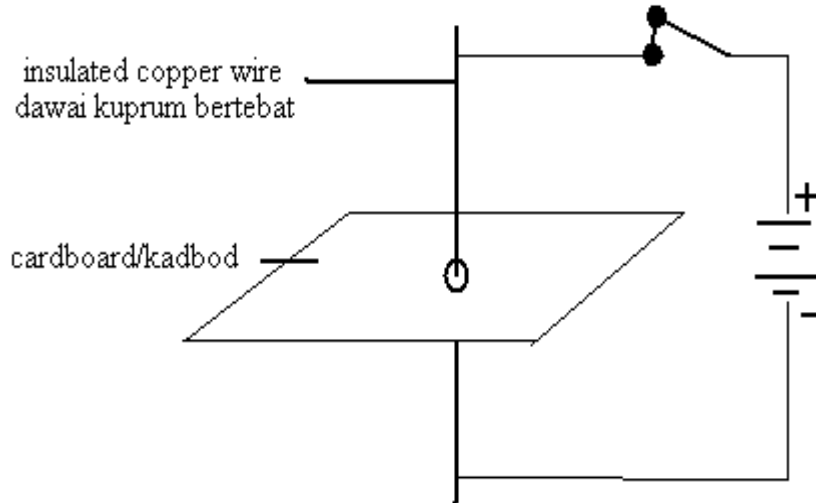


Diagram 6.2/rajah 6.2

- (b) Based on the diagram 6.2

- (i) Draw the direction of current and the magnetic field in Diagram 6.2

*Pada rajah 6.2, lukiskan arah arus dan arah medan magnet yang terbentuk*

[2 marks]

- (ii) What rule is used to determine the direction of the magnetic field

*Apakah petua yang digunakan untuk menentukan arah medan magnet.*

.....

.....

[1 mark]

- (c) Diagram 6.3 shows a crane attract iron.

*Rajah 6.3 menunjukkan kren menarik besi.*



Diagram 6.3

*Rajah 6.3*

Based on diagram 6.3 , state how the crane can increased its efficiency?

Berdasarkan rajah 6.3 nyatakan bagaimana kren dapat menambahkan kecekapannya?

i).....

..

ii).....

.....

[2 marks]

7.

(a) Diagram 7.1 shows a man cycling a bicycle.

Rajah 7.1 menunjukkan seorang lelaki mengayuh basikal.



Diagram 7.1

Rajah 7.1



- (i) In Diagram 7.1, draw an arrow to show **the direction of frictional force** in the box provided.

Pada rajah 7.1, lukis satu anak panah untuk menunjukkan **arah daya geseran** dalam petak yang disediakan.

[1 marks]

- (ii) State **two disadvantages** of the frictional force .

Nyatakan **dua keburukan** daya geseran.

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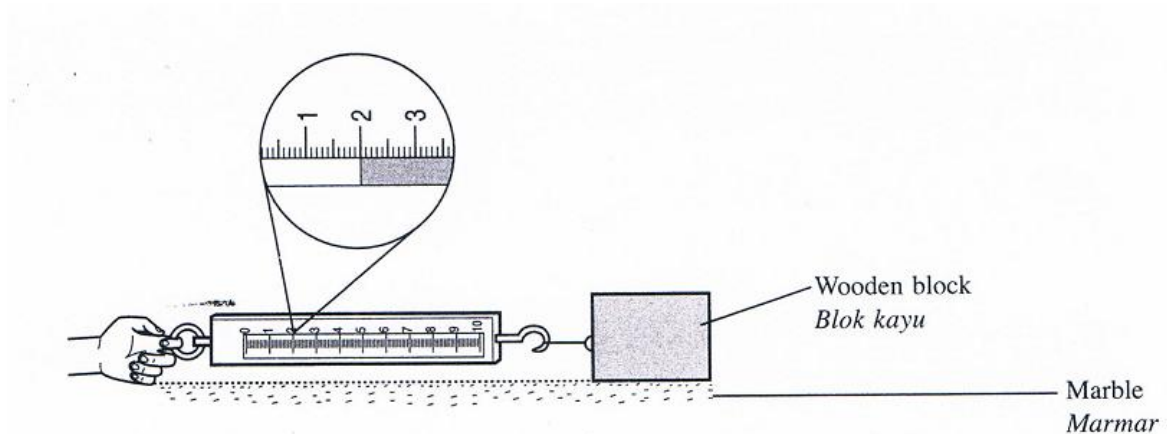
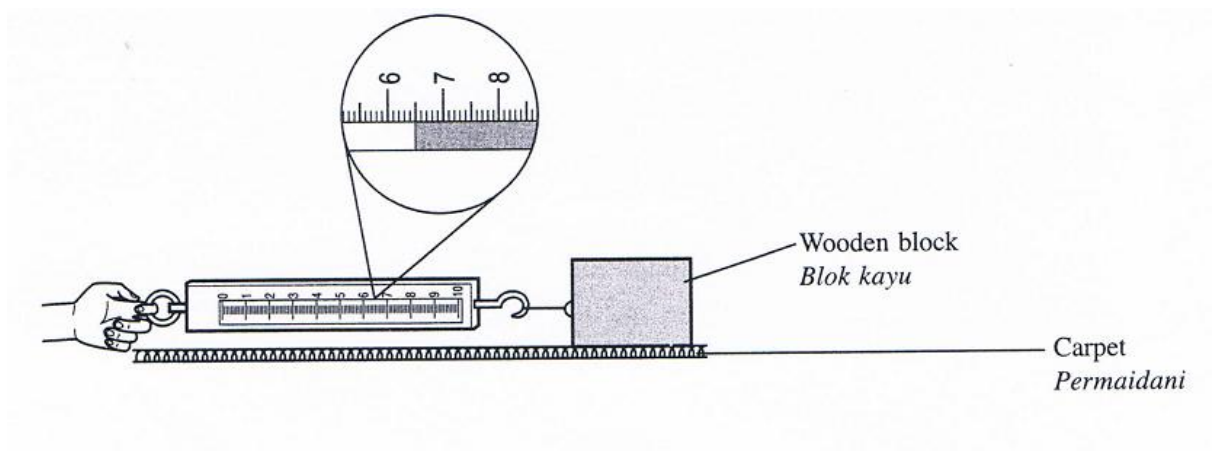
[2 marks]

- (iii) State **two factors** that affect frictional force.  
Nyatakan **dua factor** yang mempengaruhi daya geseran.

[2 marks]

(b) Diagram 7.2 shows the magnitude of the frictional force when the wooden block is pulled on different surface.

Rajah 7.2 menunjukkan magnitud daya geseran apabila blok kayu itu ditarik di atas permukaan berbeza.



- (i) In Table 7, record the reading of the spring balance  
*Dalam Jadual 7, rekodkan bacaan neraca spring.*

Types of surface <i>Jenis permukaan</i>	Reading of spring balance (N) Bacaan pada neraca spring(N)
Carpet <i>Permaidani</i>	
Marble <i>Marmar</i>	

[2 marks]

- (ii) State **one inference** about the reading of the spring balance for wooden block pulled on carpet surface.  
*Nyatakan satu inferens mengenai bacaan neraca spring bagi blok kayu yang ditarik di atas permukaan permaidani.*

[1 marks]

- (iii) Compare the readings of spring balance for carpet surface and marble surface.  
*Bandingkan bacaan neraca spring bagi permukaan permaidani dan permukaan marmar.*

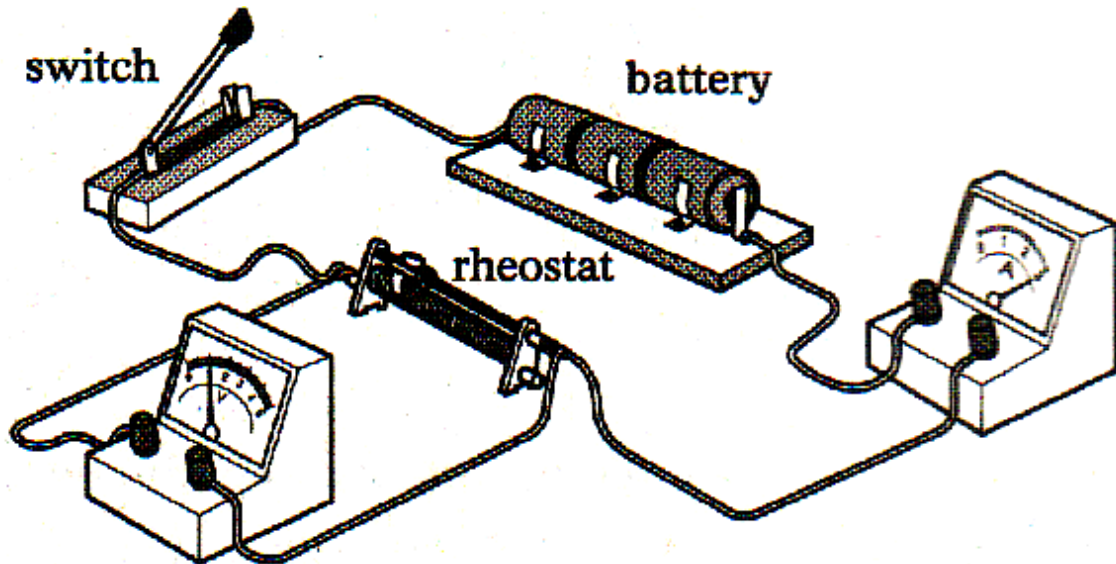
[1 marks]

- (iv) Predict the reading of spring balance if the wooden block is pulled on marble surface applied with oil.  
*Ramalkan bacaan neraca spring jika blok kayu itu ditarik di atas permukaan marmar yang disapu minyak*

[1 marks]

8. Figure 8 shows an electrical circuit to study the relationship between voltage, current and resistance .

*Rajah 8 menunjukkan litar elektrik untuk mengkaji hubungan antara voltan, arus dan rintangan.*



**FIGURE 8**  
**RAJAH 8**

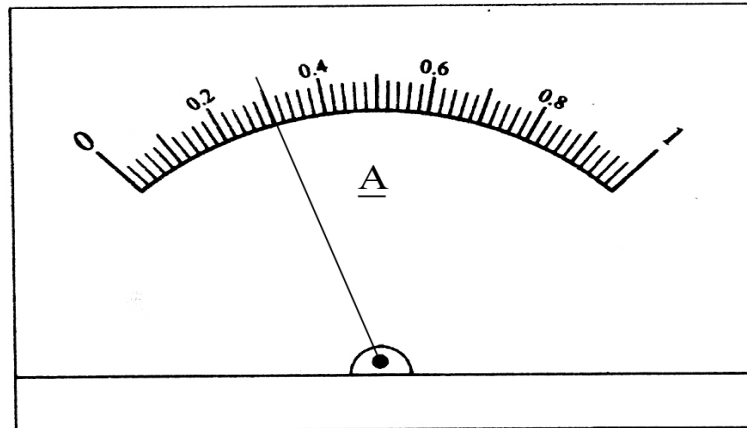
This experiment is repeated using two, three and four dry cells connected in series. The ammeter and voltmeter readings are recorded. The result is as shown in Table 8.

*Eksperimen tersebut diulang dengan menggunakan dua, tiga atau empat sel kering dalam sambungan siri. Bacaan ammeter dan voltmeter direkodkan. Keputusan tersebut ditunjukkan dalam jadual 8*

<b>Number of Dry Cells</b> <b>Bilangan sel kering</b>	<b>Current (A)</b> <b>Arus</b>	<b>Voltage (V)</b> <b>Voltan</b>
0	0	0
1	0.1	1.5
2	0.2	3.0
3	0.3	4.5
4	0.4	X

**TABLE 8**  
**Jadual 8**

- a) Record the ammeter reading in the space provided.  
*Catat bacaan ammeter dalam ruangan yang disediakan.*



Ammeter reading = \_\_\_\_\_ A

*Bacaan Ammeter* = \_\_\_\_\_ A

[1 mark]

- b) State the manipulated and responding variables in the experiment.  
*Nyatakan pembolehubah yang dimanipulasikan dan pembolehubah yang bergerakbalas dalam eksperimen ini.*

Manipulated variable <i>Pembolehubah manipulasi</i>	
Responding variable <i>Pembolehubah bergerakbalas.</i>	

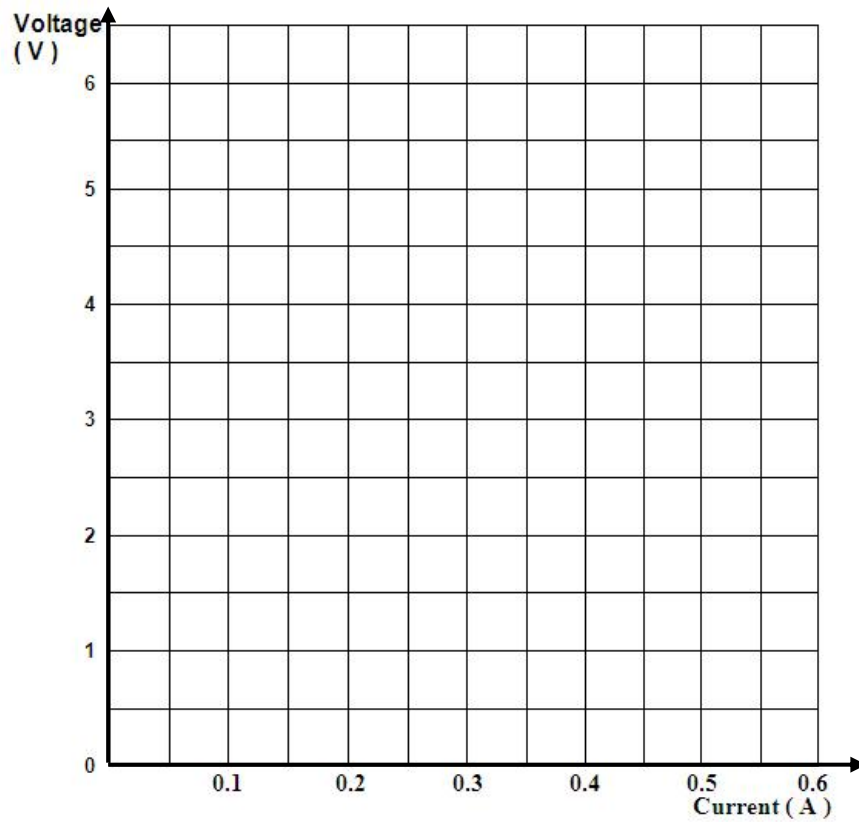
[ 2 marks]

- c) Based on Table 8, find the value of X.  
*Berdasarkan Jadual 8, cari nilai X*

[1 mark ]

- d) Based on the information in Table 8, plot a graph to show the relationship between voltage and current.

*Berdasarkan maklumat dalam Jadual 8, plot graf untuk menunjukkan hubungan antara voltan dan arus.*



[2 marks]

- e) (i) Based on the graph, what is the relationship between voltage and current ?  
*Berdasarkan graf, apakah hubungan antara voltan dan arus?*

[1 mark]

- (ii) Predict what will happened to the ammeter reading if the rheostat is **replaced** with a short length of copper wire ?

*Ramalkan apakah yang terjadi kepada bacaan ammeter jika rheostat **diganti** dengan wayar kuprum yang pendek.*

[ 1 mark ]

f) Draw a **parallel circuit** in symbols using the following components:

*Lukis litar selari dengan menggunakan simbol-simbol bagi komponen-komponen berikut,*

<b>Connecting wires</b>	<b>Switch</b>	<b>Two dry cells</b>	<b>One voltmeter</b>	<b>Two bulbs</b>
<i>Wayar penyambung</i>	<i>Suis</i>	<i>Dua sel kering</i>	<i>Satu voltmeter</i>	<i>Dua mentol.</i>

[2 marks]

End of Question Paper



Diagram 7.1 shows the apparatus set-up and the initial reading of the pointer in an experiment.  
*Rajah 7.1 menunjukkan susunan radas dan bacaan awal penunjuk eksperimen.*

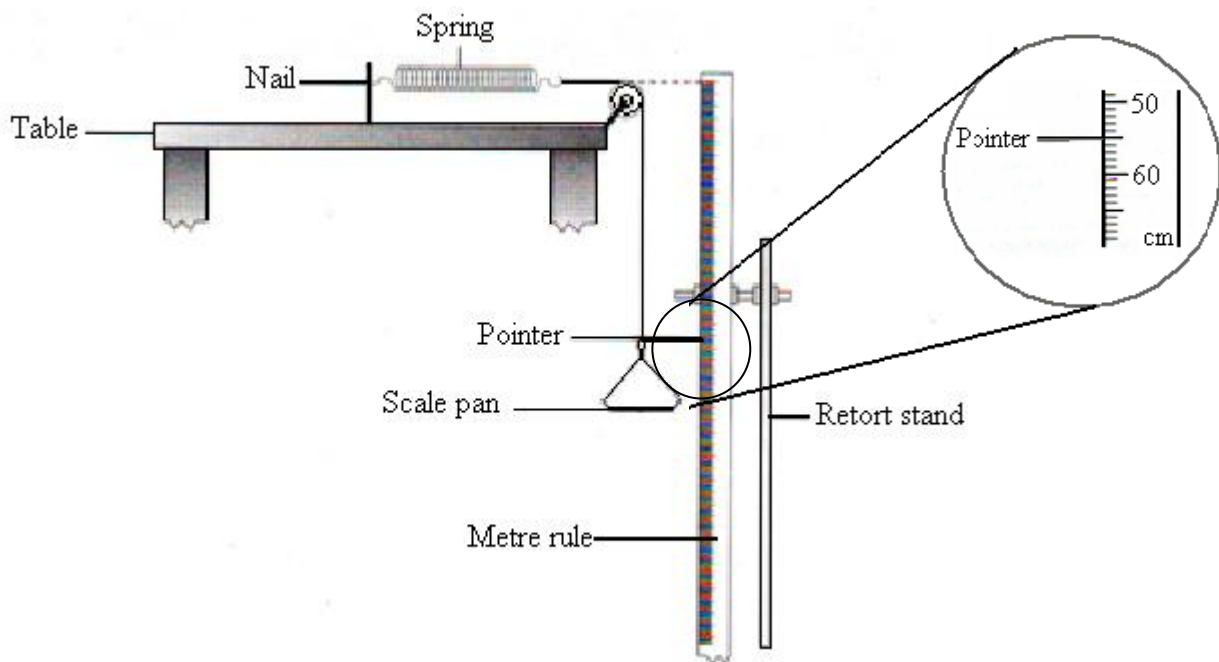


DIAGRAM 7.1

The experiment is carried out in the following way:

*Eksperimen dijalankan seperti di bawah*

Step 1 : The initial position of the pointer is recorded.

*Langkah 1: Kedudukan awal penunjuk direkodkan*

Step 2 : A 100g load is put on the scale pan and the new position of the pointer is recorded.

*Langkah 2 : Beban 100g diletakkan dalam ceper dan kedudukan baru penunjuk direkodkan.*

Step 3 : The 100g load is removed and the first two steps are repeated with 200g, 300g, 400g and 500g loads.

*Langkah 3 : Beban 100g dialih dan langkah 2 diulangi dengan beban 200g, 300g, 400g dan 500g.*

Based on Diagram 7.1, record the initial reading of the pointer.

Berdasarkan rajah 7.1 rekodkan bacaan awal penunjuk.

..... cm

[1 mark]

- (b) Table 7.1 shows the results of this experiment.  
*Jadual 7.1 menunjukkan keputusan eksperimen.*

<b>Mass of load /g</b> <b>Jisim beban</b>	100	200	300	400	500
<b>Pointer position /cm</b> <b>Kedudukan penunjuk.</b>	57	59	61	63	65

Table 7.1  
*Jadual 7.1*

State the variables involved in this experiment.

*Nyatakan pembolehubah yang terlibat dalam eksperimen ini.*

- (i) Manipulated variable  
 Pembolehubah yang dimanipulasikan

.....

- (ii) Responding variable  
 Pembolehubah yang bergerakbalas

.....

- (iii) Constant variable  
 Pembolehubah yang ditetapkan.

.....

[3 marks]

- (c) Complete Table 7.2 by calculating the force and the extension produced.  
 (1kg = 10N)

<b>Mass of load /g</b>	<b>Force /N</b>	<b>Extension of spring /cm</b>
------------------------	-----------------	--------------------------------

100	1	2
200		
300		
400		
500		

Table 8.2

[3 marks]

- (d) For this part of the question, use the graph paper provided on page 14.  
Based on Table 1.2, draw a graph of extension of spring against force.

[2 marks]

- (e) Based on the graph drawn in 8(d),

- (i) predict the extension of spring when a load of 450g is added to the scale pan.

..... cm

[1 mark]

- (ii) state the relationship between the extension of spring and the force exerted on it.

.....

.....

[1 mark]

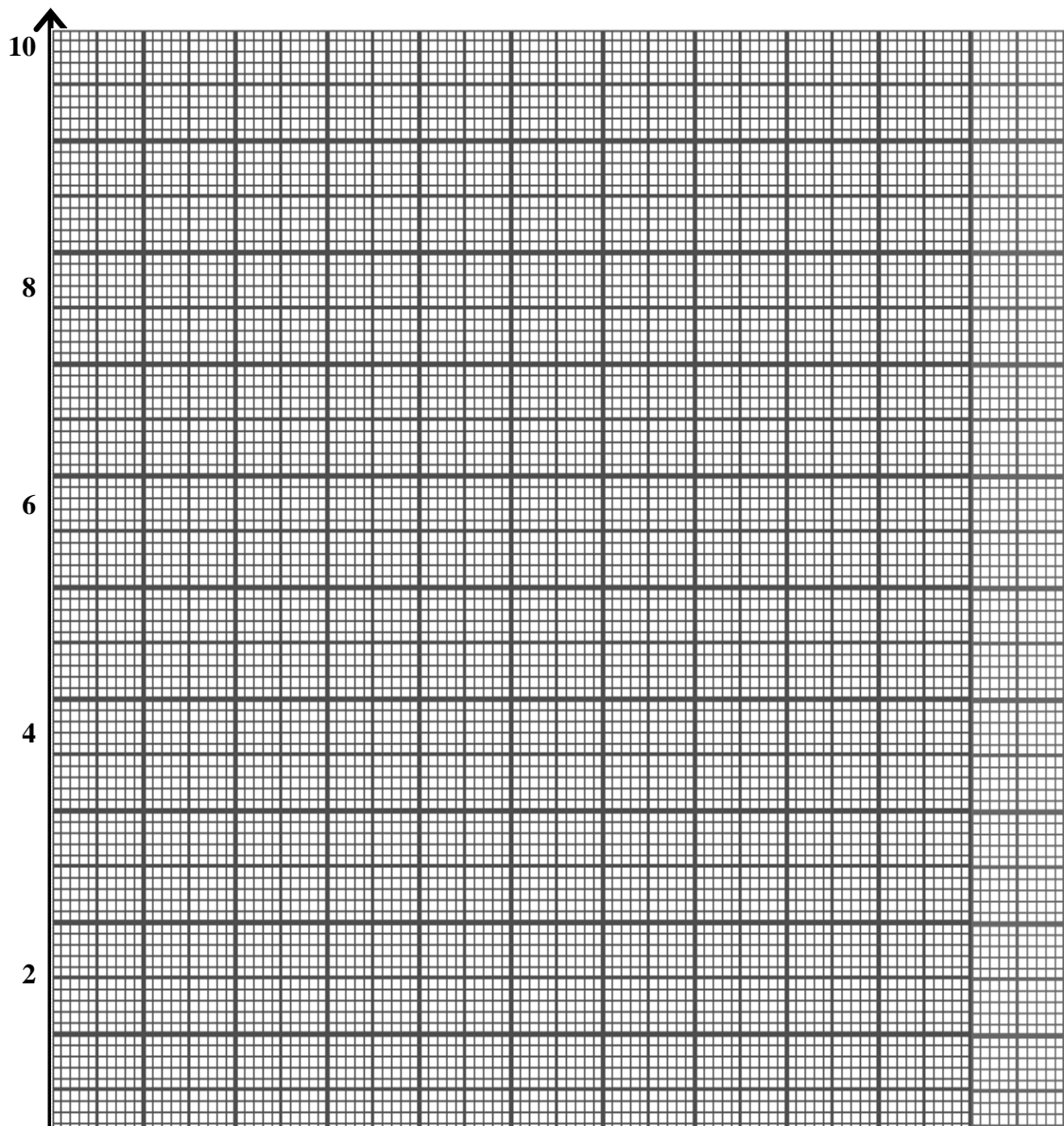
- (f) What can you deduce about the meaning of **extension of spring**?

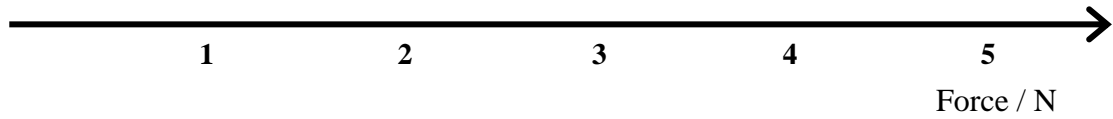
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[1 mark]

**Graph for Question 8 (*d*)**

Extension of  
spring / cm





**END OF QUESTION PAPER**

:

- (a) (i) What is pollination?  
*Apakah pendebungaan?*

.....  
[1 mark]

- (ii) In Diagram 5.1, label the types of pollination M and N in the box provided.  
*Dalam Rajah 5.1, label jenis-jenis pendebungaan M dan N dalam petak yang disediakan.*

[2 mark]

- (b) State two advantages of the type of pollination N compared to type of pollination M.

*Nyatakan dua kebaikan bagi jenis pendebungaan dalam Rajah N berbanding jenis pendebungaan M.*

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

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

[2 mark]