

**SULIT**

NAMA PELAJAR

TINGKATAN



**BAHAGIAN PENGURUSAN**  
**SEKOLAH BERASRAMA PENUH DAN SEKOLAH KLUSTER**  
**KEMENTERIAN PELAJARAN MALAYSIA**

**PEPERIKSAAN PERCUBAAN PMR 2009**

**55/2**

**TINGKATAN 3**

**SCIENCE**

**Kertas 2**

**Ogos**

1 ½ jam

Satu jam tiga puluh minit

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Tulis nama penuh dan tingkatan anda pada ruangan yang disediakan.*
2. *Kertas soalan ini adalah dalam Bahasa Inggeris.*
3. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

<i>Untuk Kegunaan Pemeriksa</i>			
Kod Pemeriksa:			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	6	
	2	6	
	3	6	
	4	6	
	5	8	
	6	8	
B	7	10	
	8	10	
JUMLAH		60	

Kertas soalan ini mengandungi 19 halaman bercetak

**Section A**

[40 marks]

Answer **all** questions.

- 1 Diagram 1 shows three instruments, J, K and L which are commonly used in the laboratory.

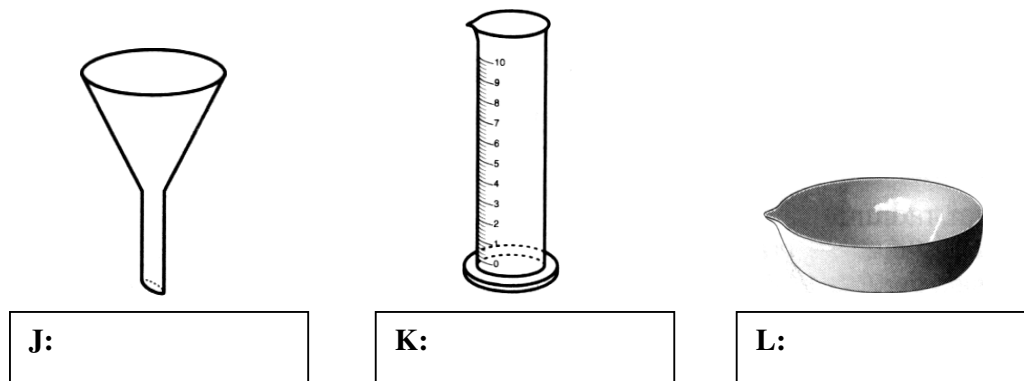


Diagram 1

- (a) (i) On Diagram 1, label the apparatus, J, K and L using the following words:

Measuring cylinder	Evaporating dish	Filter funnel
--------------------	------------------	---------------

[ 3 marks ]

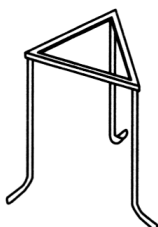
- (ii) Based on your answer in (a) (i), which of the instruments is used to measure the volume of a liquid?

..... [1 mark]

- (b) Draw lines to match the instruments with their respective functions.

Instruments

Function



- To support apparatus during heating
- To measure temperature
- To conduct the excess heat away
- To measure time

[2 marks]

2 Diagram 2.1 shows the classification of nutritious food in a Food Pyramid.



Diagram 2.1

(a) State the importance of using a food pyramid.

.....  
[1 mark]

(b) (i) What is the function of food class X?

.....  
[1 mark]

(ii) What happens if an individual lacks class food X in his daily diet?

.....  
[1 mark]

(c) Diagram 2.2 shows a person suffering from a kind of disease.



Diagram 2.2

Which class of food will cause the disease in Diagram 2.2 if taken excessively in our daily diet?

.....  
[1 mark]

- (d) (i) A student was given few food samples by his teacher.  
How can he test the presence of carbohydrates in the food sample?

.....  
[1 mark]

- (ii) State the end product of digestion of carbohydrates in the small intestine?

.....  
[1 mark]

- 3 Diagram 3.1 shows a food chain in the oil palm estate.

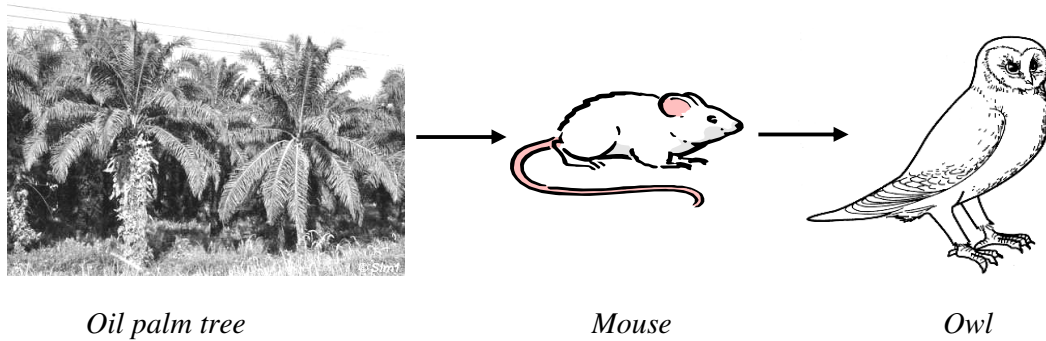


Diagram 3.1

- (a) (i) What is the main energy source for this food chain?

.....  
[1 mark]

- (ii) Write down the energy changes when the oil palm leaf absorbs sunlight during photosynthesis.

.....  
[1 mark]

- (b) (i) Owls are used to control the mouse population in the oil palm estate. State the method used.

.....  
[1 mark]

- (ii) State **one** advantage of the method you mentioned in (b)(i).

.....  
[1 mark]

- (d) Diagram 3.2 shows a pyramid of numbers.

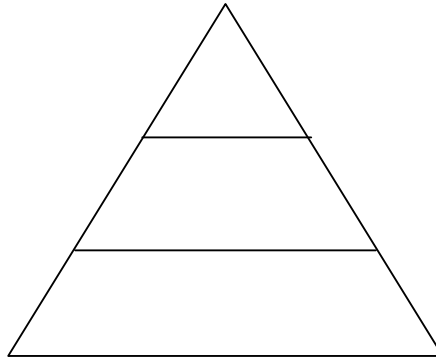


Diagram 3.2

Complete the pyramid of numbers to represent the food chain in Diagram 3.1.

[1 mark]

- (e) If all owls migrate to another place, state another organism that can be introduced to control the mouse population in this oil palm estate.

.....

[1 mark]

4 Diagram 4 shows an appliance that uses the principle of air pressure.

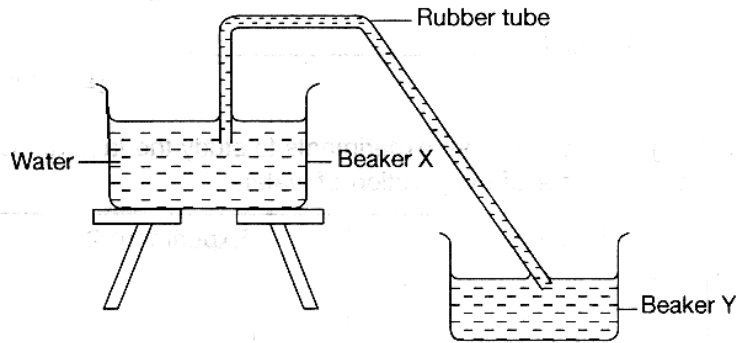


Diagram 4

(a) (i) Name the apparatus in Diagram 4.

.....  
[1 mark]

(ii) State the use of the apparatus.

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

(b) On Diagram 4, mark the symbols:

- |    |
|----|
| HP |
|----|

 for high pressure
- |    |
|----|
| LP |
|----|

 for low pressure

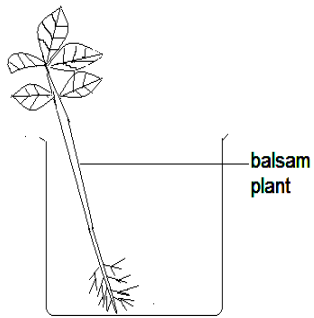
[2 marks]

(c) Can the apparatus function properly if the rubber tube is not filled with water?  
Explain.

.....  
.....

[2 marks]

5 Diagram 5.1 shows an experiment conducted on a balsam plant.



R  
Diagram 5.1

- (a) (i) What happens if a fresh balsam plant is left in beaker R for two hours?  
.....  
[1 mark]
- (ii) Predict what will happen to the balsam plant if water is poured into beaker R?  
.....  
[1 mark]
- (iii) What can you infer from your observation in (a) (ii) above?  
.....  
[1 mark]
- (iv) State the support system in a balsam plant?  
.....  
[1 mark]



(b) (i) Diagram 5.2 shows the same aquatic plant in two different situations.

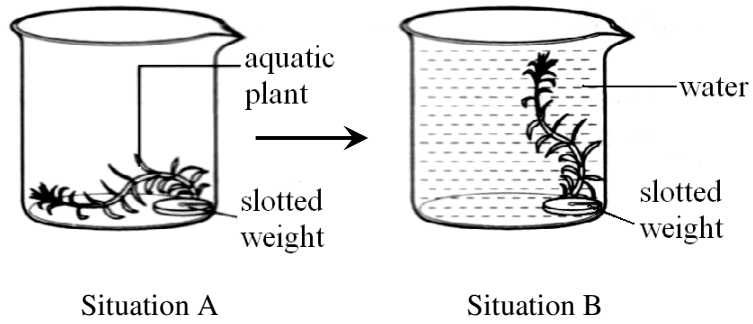


Diagram 5.2

State your observation in situation A and situation B ?

..... [1 mark]

(ii) What is the inference for your observation in (b)(i) above?

..... [1 mark]

(iii) What makes the aquatic plant in situation B stand upright?

..... [1 mark]

(c) What is the function of the support system in both plants in this experiment?

..... [1 mark]

- 6 Diagram 6 shows the set-up apparatus to determine the action of heat on plumbum sulphide.

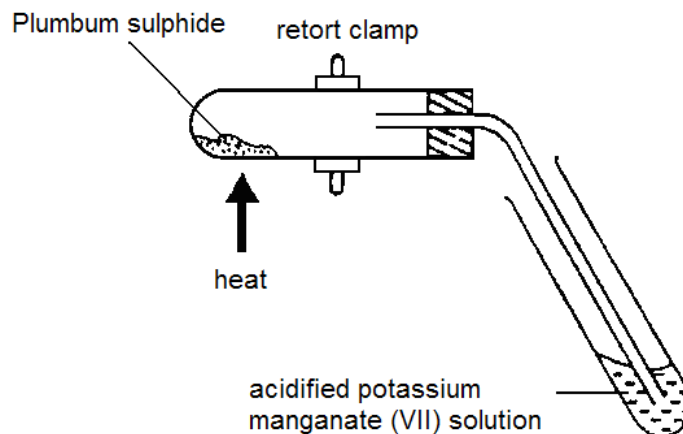


Diagram 6

- (a) (i) Describe the colour change of the acidified potassium manganate (VII) solution.

.....  
[1 mark]

- (ii) Name the solution that can be used to substitute the acidified potassium manganate (VII) solution.

.....  
[1 mark]

- (iii) Name the white residue produced after plumbum sulphide is heated.

.....  
[1 mark]

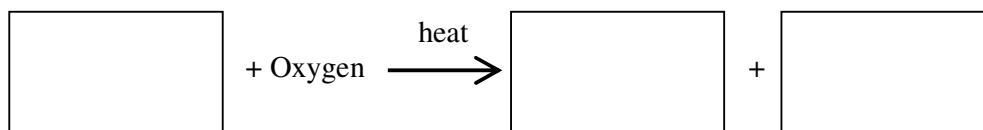
- (b) State the two elements found in plumbum sulphide.

(i) .....

(ii) .....

[2 marks]

- (c) Write the word equation for the reaction of heat on plumbum sulphide.



[2 marks]

- (d) Give **one** example of a chemical compound that can replace plumbum sulphide in this experiment.

.....  
[1 mark]

**Section B**

[20 marks]

Answer **all** questions.

- 7 (a) Diagram 7.1 shows four organisms, P, Q, R and S that reproduce in different ways.

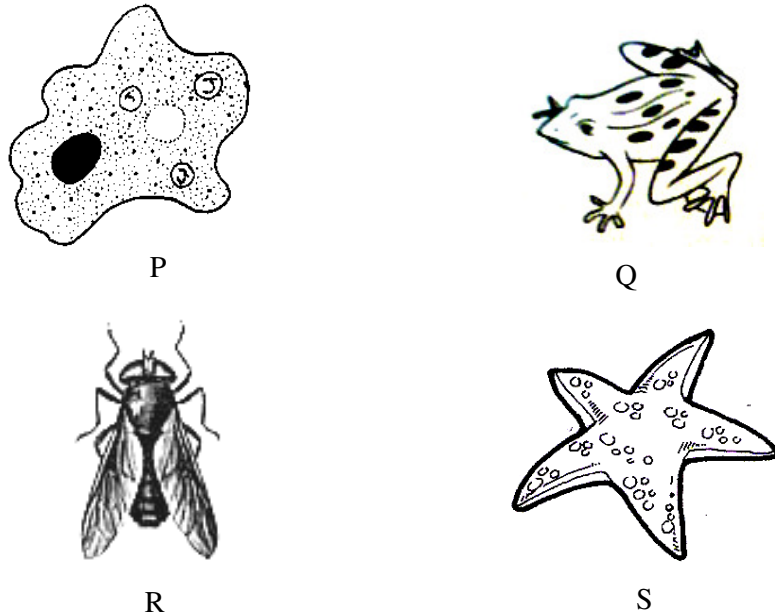


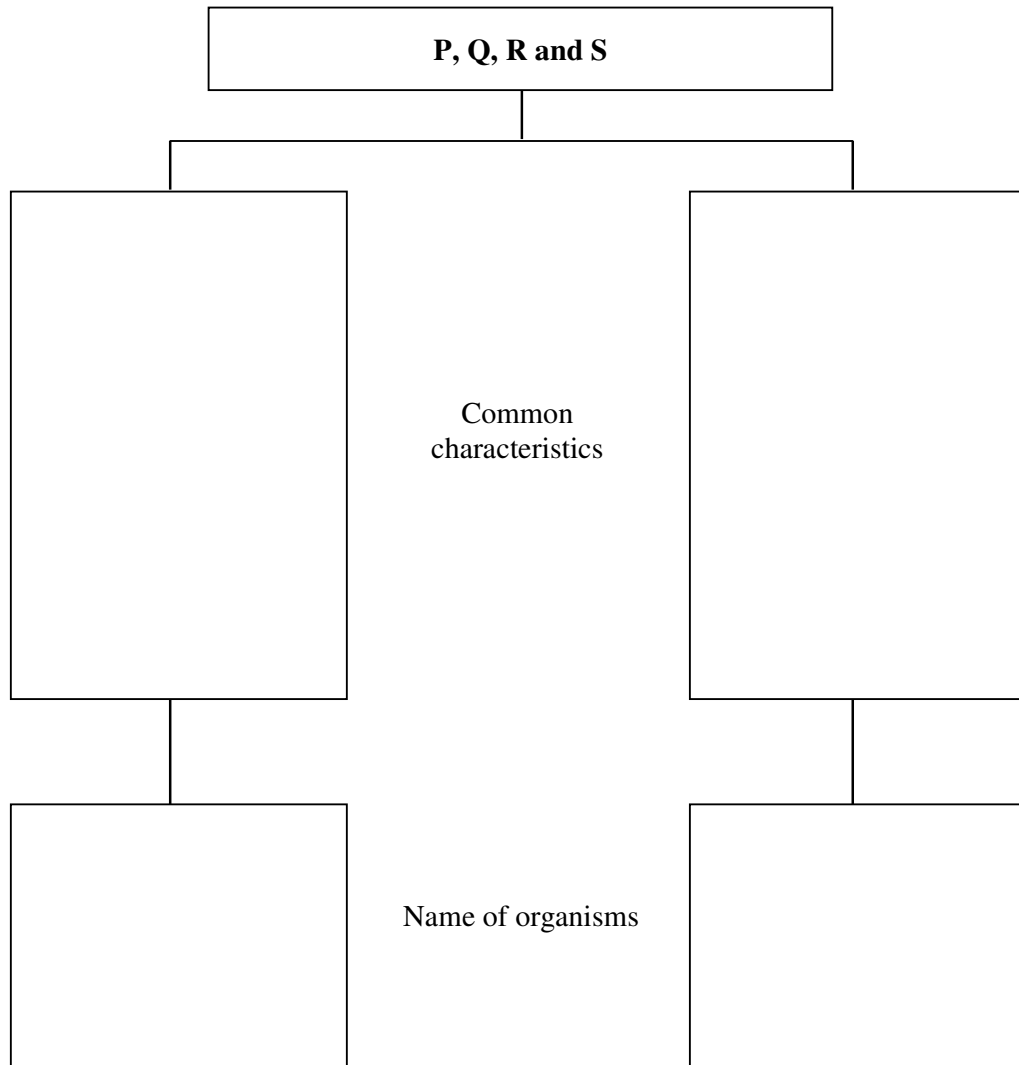
Diagram 7.1

State **one** characteristic that can be observed from any **three** organisms by referring to their way of reproduction.

Organisms	Way of Reproduction
	.....
	.....
	.....

[3 marks]

- (b) Classify the organisms, P, Q, R and S into groups based on their common characteristics.



[4 marks]

(c) Diagram 7.2 shows three conditions, J, K and L, for germination of seeds.

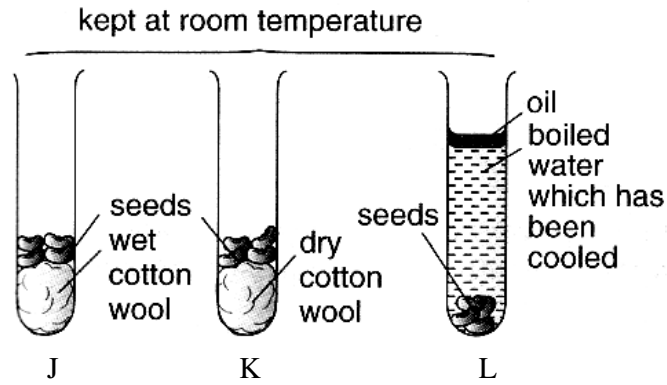


Diagram 7.2

Based on Diagram 7.2:

(i) State **one** inference about the condition required for germination of seeds.

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

(ii) Predict which condition is the most suitable for the seeds to germinate.

.....  
[1 mark]

(iii) State the relationship between the presence of water and air with the germination of seeds.

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

8 (a) Diagram 8.1 shows two circuits P and Q that have different numbers of bulbs.

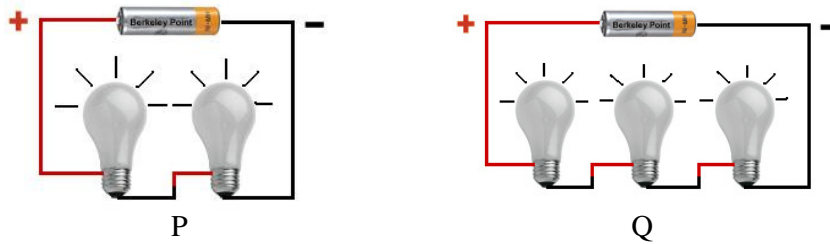


Diagram 8.1

The brightness of bulbs in two circuits is observed.  
State one inference about the brightness of the bulbs.

.....  
[1 mark]

(b) Diagram 8.2 shows an electrical circuit set up to study the relationship between the length of nichrome wire and current flow.

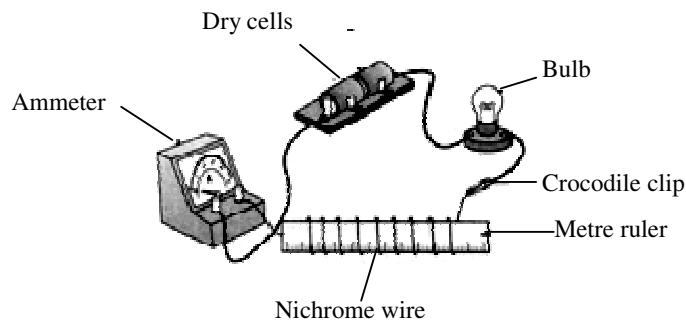


Diagram 8.2

The steps of the experiment are as follows:

1. The crocodile clip is touched on the nichrome wire at the length of 10 cm.
2. The ammeter reading is recorded.
3. Step 1 and step 2 are repeated by increasing the length of nichrome wire at 20 cm, 30 cm and 40 cm respectively.

The results are shown in Table 8.3.

Length of nichrome wire (cm)	Ammeter reading (A)
10	0.85
20	0.80
30	0.75
40	

Table 8.3

Diagram 8.4 shows the ammeter reading when the length of nichrome wire is 40 cm.

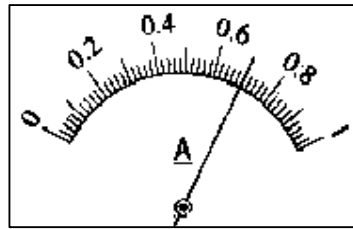


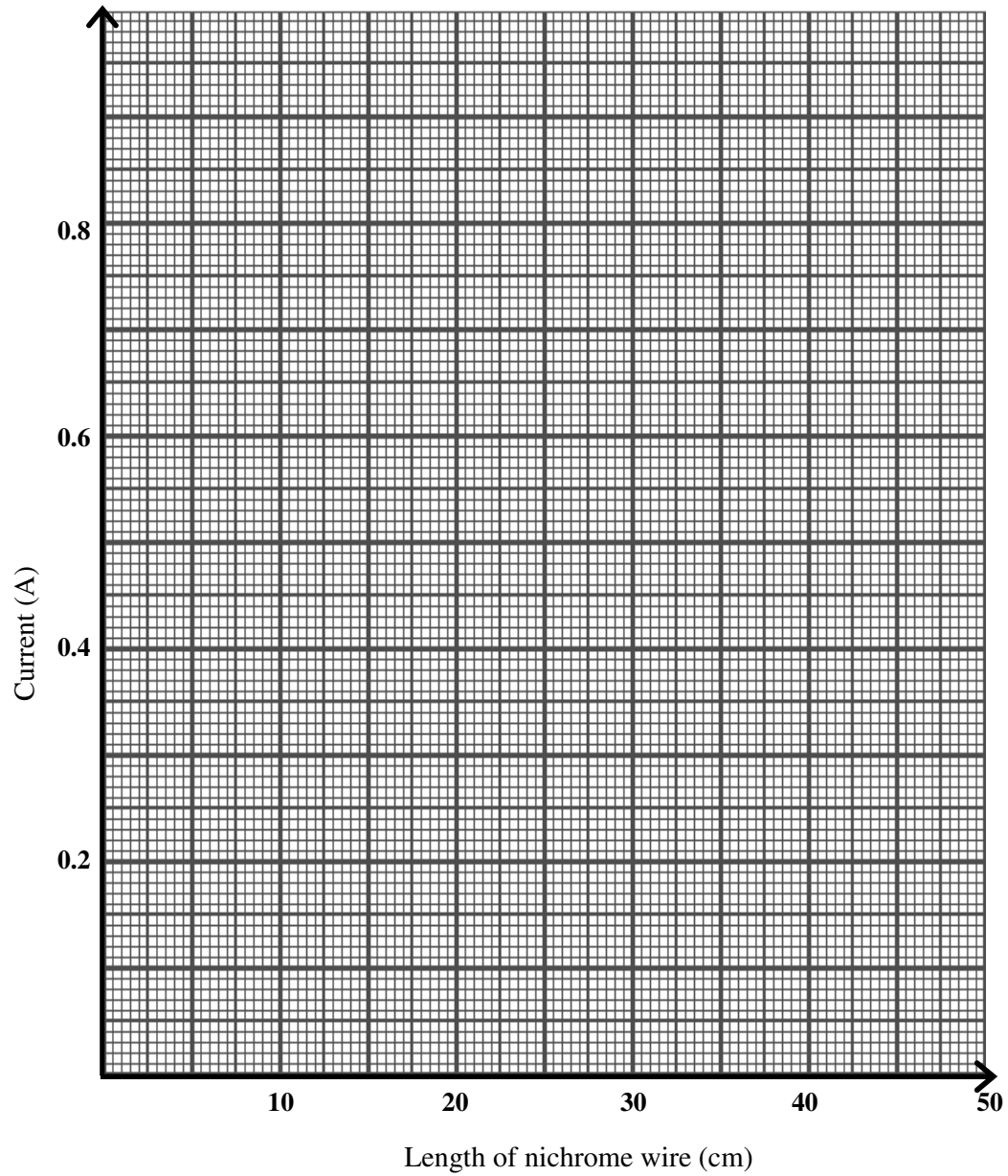
Diagram 8.4

Based on Table 8.3 and Diagram 8.4:

- (i) Record the ammeter reading for 40 cm length of wire used in Table 8.3.  
[1 mark]
- (ii) Use the graph paper provided on page 17 to answer this part of the question. Based on the readings in Table 8.3, plot a graph to show the relationship between the length of nichrome wire against current flow.  
[2 marks]



Graph for Question 8(b)(ii)



- (iii) Based on the graph drawn in 8(b)(ii), state the relationship between the length of nichrome wire and current.

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

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

.....  
[1 mark]

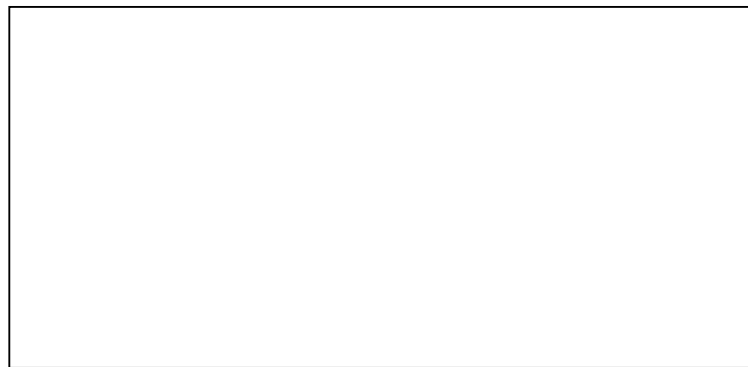
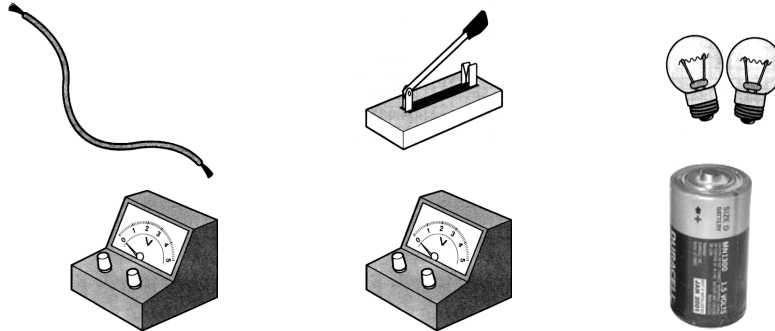
- (v) Predict the ammeter reading if 50 cm nichrome wire is used in the circuit.

.....  
[1 mark]

- (vi) Define operationally “the current”.

.....  
[1 mark]

- (vii) In the box provided draw a circuit diagram to show a parallel circuit by using the symbols for the following components.



[2 marks]

**END OF QUESTION PAPER**

**INFORMATION FOR CANDIDATES**

1. This question paper consist of two sections: **Section A** and **Section B**.
2. Answer **all** questions in both sections.
3. Write your answers in the spaces provided in the question paper.
4. Show your working, it may help you to get marks.
5. If you wish to change your answer, neatly cross out the answer that you have done. Then write down the new answer.
6. The diagrams in the questions provided are not drawn to scale unless stated.
7. Marks allocated for each question or sub-part of a question are shown in brackets.
8. The time suggested to complete **Section A** is 60 minutes and **Section B** is 30 minutes.
9. You may use a non-programmable scientific calculator.
10. Hand in this question paper to the invigilator at the end of the examination.