

SULIT  
55/2  
Science  
Paper 2  
Masa:  
1½ jam

55/2

NAMA MURID

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ANGKA GILIRAN

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## PEPERIKSAAN PERCUBAAN PMR TAHUN 2009

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### SCIENCE

Paper 2

Satu jam tiga puluh minit

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. Tulis **nama penuh dan angka giliran anda** pada ruang yang disediakan.
2. Kertas soalan ini adalah dalam Bahasa Inggeris dan Bahasa Melayu
3. Calon dikehendaki membaca maklumat di halaman 2.

Kod Pemeriksa			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	6	
	2	6	
	3	7	
	4	7	
	5	7	
	6	7	
B	7	8	
	8	12	
JUMLAH		60	

Kertas soalan ini mengandungi 21 halaman bercetak

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT UNTUK CALON**

1. This question paper consist of two sections: **Section A** and **Section B**.  
*Kertas soalan ini mengandungi dua bahagian : **Bahagian A** dan **Bahagian B**.*
2. Answer all question in both sections.  
*Jawab semua soalan dalam kedua-dua bahagian*
3. Write your answers in the space provided in the question paper.  
*Jawapan anda hendaklah ditulis pada ruang yang disediakan dalam kertas.*
4. Show your working, it may help you to get marks.  
*Tunjukkan kerja mengira, ini membantu anda mendapat markah.*
5. If you wish to change your answer, neatly cross out the answer that you have done. Then write down the new answer.  
*Jika anda hendak menukar jawapan, batalkan jawapan yang telah dibuat. Kemudian tulis jawapan yang baru.*
6. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah yang mengiringi soalan tidak mengikut skala kecuali dinyatakan.*
7. Marks allocated for each question or part question are shown in brackets.  
*Markah yang diperuntukkan bagi setiap soalan atau ceraiian soalan ditunjukkan dalam kurungan.*
8. You may use a non-programmable scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram*
9. Hand in this question paper at the end of the examination.  
*Serahkan kertas soalan ini kepada pengawas peperiksaan pada akhir peperiksaan.*

**Part A**  
**Bahagian A**  
[40 mark]  
[40 markah]  
Answer **all** questions  
Jawab **semua** soalan

1. Diagram 1 shows some measuring tools.  
*Rajah 1 menunjukkan alat-alat penyukat.*

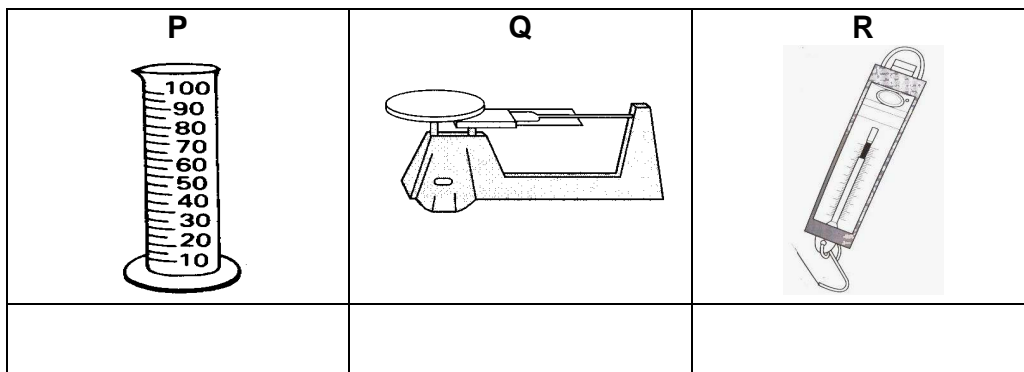


Diagram 1  
*Rajah 1*

- (a) On Diagram 1, label P, Q and R with the following words.  
*Pada Rajah 1, labelkan P, Q dan R dengan perkataan berikut.*

Spring balance <i>Neraca spring</i>	Triple Beam balance <i>Neraca tiga palang</i>	Measuring cylinder <i>Silinder penyukat</i>
--	--	--

[3 marks]

1(a)

	3
--	---

- (b) Draw lines to show the correct match between the measuring tools and their uses.

*Lukis garisan untuk menunjukkan padanan yang betul antara alat penyukat dan penggunaannya.*

Draw the lines as shown below.

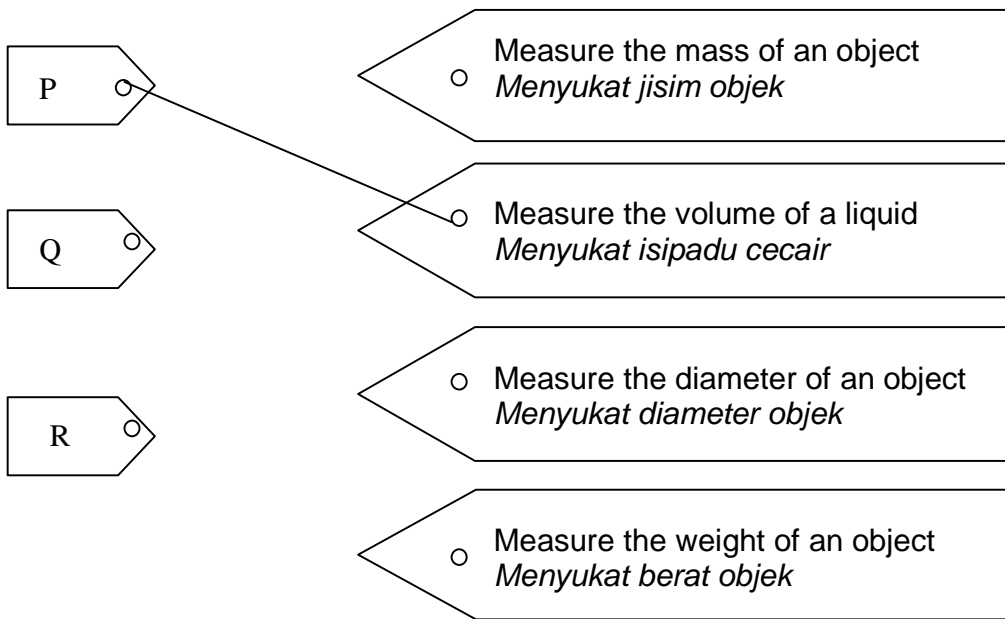
*Lukis garisan seperti yang ditunjukkan di bawah.*

Measuring tools

*Alat penyukat*

Uses

*Kegunaan*



[ 2 marks]

1(b)

	2
--	---

- (c) State one measuring tool that can be use to measure mass of an object other than above measuring tools.

*Nyatakan satu alat lain yang digunakan untuk menyukat jisim objek selain daripada alat yang dinyatakan di atas.*

.....

[ 1 mark ]

1(c)

	1
--	---

Total

	6
--	---

2. Diagram 2 shows the structure of the sun.  
*Rajah 2 menunjukkan struktur matahari.*

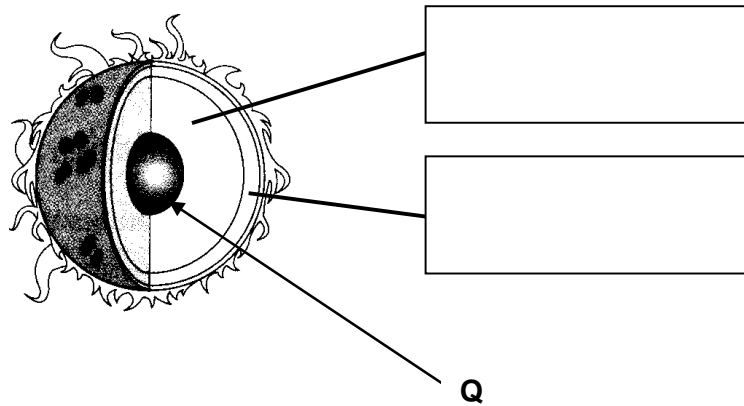


Diagram 2  
*Rajah 2*

- (a) On Diagram 2, label the structures of the Sun with the following words.  
*Pada Diagram 2, labelkan struktur Matahari dengan menggunakan perkataan berikut.*

Chromospheres <i>Kromofera</i>	Corona <i>Korona</i>	Photosphere <i>Fotosfera</i>
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[2 marks]

- (b)(i) Sunspot and prominences are two phenomena that occur on the surface of the sun. Name another phenomenon that occurs on the surface of the sun.

*Tompok hitam dan prominens ialah dua fenomena yang berlaku pada permukaan matahari. Namakan satu lagi fenomena yang berlaku pada permukaan matahari.*

.....  
[1 mark]

- (ii) State one effect of the phenomena that occurs on the surface of the sun to the Earth.

*Nyatakan satu kesan fenomena yang berlaku pada permukaan matahari terhadap Bumi.*

.....  
[1 mark]

2(a)

2
---

2(b)(i)

1
---

2(b)(ii)

1
---

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55/2

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Use

- (c)(i) Name the part labelled Q.  
*Namakan bahagian berlabel Q.*

2(c)(i)

.....  
[1 mark]

1

- (ii) What is the process that occurs at Q which gives out heat energy and light energy?  
*Apakah proses yang berlaku di Q yang membebaskan tenaga haba dan tenaga cahaya?*

2(c)(ii)

.....  
[1 mark]

1

Total

6

3. Diagram 3 shows a process that takes places in flower.  
Rajah 3 menunjukkan proses berlaku dalam bunga.

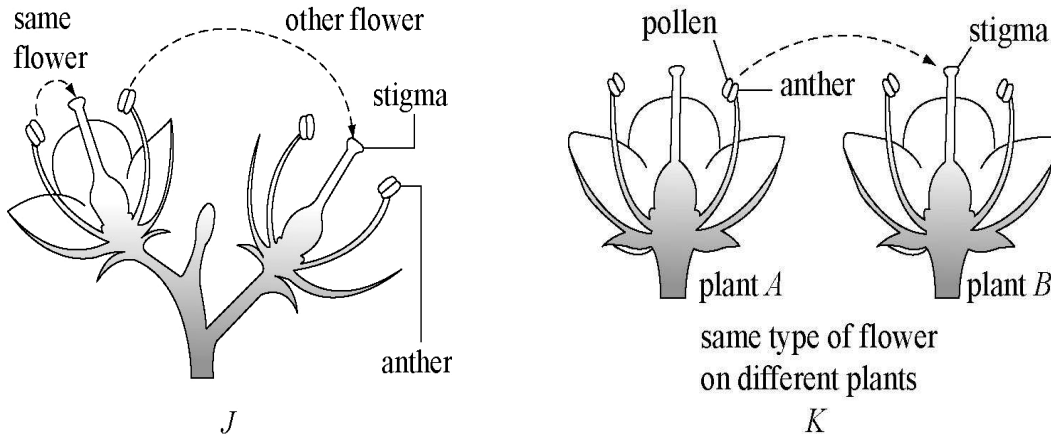


Diagram 3  
Rajah 3

(a) Label the process that occur in J and K  
Labelkan proses yang berlaku di J dan K

J : .....

K : .....

[2 marks]

(b) State one difference between process in J and K  
Nyatakan satu perbezaan antara proses J dan K

.....

.....

[1 mark]

3(a)

	2
--	---

3(b)

	1
--	---

For  
Examiner's  
Use

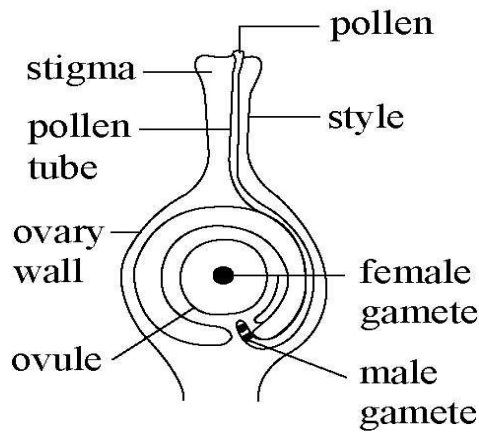


Diagram 3.1  
Rajah 3.1

Diagram 3.1 shows a process that takes places in a flower.  
*Rajah 3.1 menunjukkan proses yang berlaku dalam bunga.*

- (c) i. Name the process that occurs in the diagram 3.1  
*Namakan proses yang berlaku dalam rajah 3.1*

.....  
[1 mark]

- ii. What will happen to the ovary after the process in (c)(i).  
*Apakah akan berlaku kepada ovari selepas proses dalam (c)(i)*

.....  
[1 mark]

- (d) State two methods how a farmer can produce a better quality fruits and seeds from his crops.  
*Nyatakan dua kaedah yang boleh dilakukan oleh seorang petani yang mahu menghasilkan buah dan biji benih yang berkualiti.*

i. ....

ii. ....

[2 marks]

3(c)(i)

	1
--	---

3(c)(ii)

	1
--	---

3(d)

	2
--	---

Total

	7
--	---



For  
Examiner's  
Use

4. Diagram 4 shows the result of an experiment to determine the composition of water. In this experiment, water is broken down to its elements using electricity.

*Rajah 4 menunjukkan keputusan satu eksperimen untuk menentukan komposisi air. Dalam eksperimen ini, air diuraikan kepada elemennya menggunakan elektrik.*

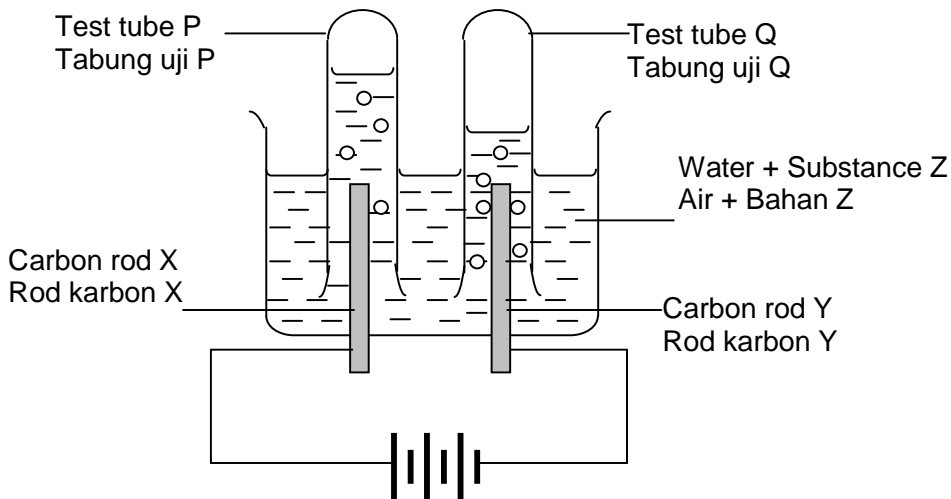


Diagram 4  
Rajah 4

- (a) What is the name of the process shown in diagram 4?  
*Apakah nama proses yang ditunjukkan dalam rajah 4?*

.....

[1mark]

- (b) Which carbon rod functions as negative electrode?  
*Rod carbon yang manakah berfungsi sebagai eletrod negative?*

.....

[ 1 mark]

4(a)

1

4(b)

1

For  
Examiner's  
Use

- (c) When the circuit is closed , gases is collected in each test tube . What is the gas collected in test tube Q?

*Apabila litar ditutup, gas dikumpulkan dalam setiap tabung uji. Apakah gas yang dikumpul dalam tabung uji Q?*

.....  
[1 mark]

	1
--	---

4(c)

- (d) State how to identify the gas collected in test tube Q?

*Nyatakan bagaimana untuk mengenalpasti gas yang dikumpul di Q?*

.....  
[1 mark]

	1
--	---

4(d)

- (e) If the gas collected in test tube P is 10 cm<sup>3</sup> , calculate the volume of gas collected in test tube Q.

*Jika gas yang dikumpulkan dalam tabung uji P ialah 10 cm<sup>3</sup> , kirakan isipadu gas yang dikumpul dalam tabung uji Q.*

.....  
[2 marks ]

	2
--	---

4(e)

4(f)

	1
--	---

- (f) State one uses of gas collected in test tube P.

*Nyatakan satu kegunaan gas yang dikumpul dalam tabung uji P.*

.....  
[1 mark]

	7
--	---

Total

For  
Examiner's  
Use

5. Diagram 5 shows a substance P which is allowed to burn in a gas jar containing lime water.  
*Rajah 5 menunjukkan Bahan P dibakar di dalam balang gas yang mengandungi air kapur.*

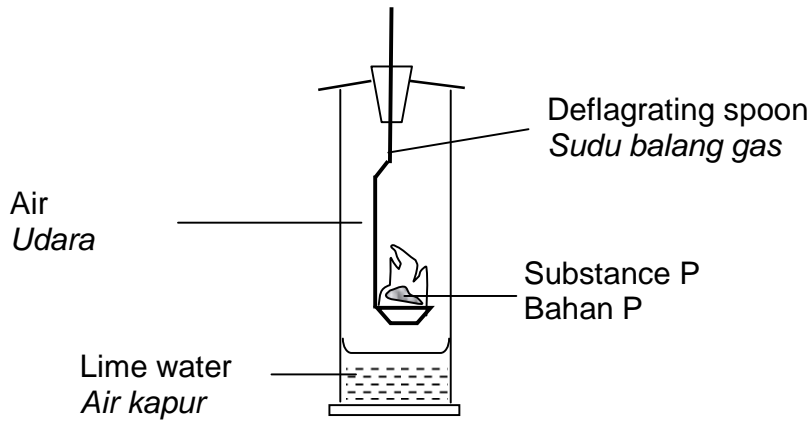


Diagram 5  
*Rajah 5*

- (a) State one observation you could make after the flame goes out.  
*Nyatakan satu pemerhatian yang boleh dibuat selepas nyalaan padam.*

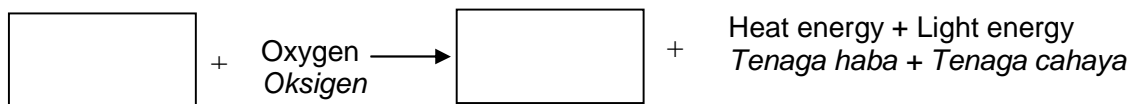
.....  
[1 mark]

- (b)(i) List the products of combustion if substance P is kerosene.  
*Senaraikan hasil pembakaran jika bahan P ialah kerosene.*

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

[2 marks]

- (ii) Complete the word equation below if substance P is charcoal.  
*Lengkapkan persamaan perkataan di bawah jika bahan P ialah arang.*



[2 marks]

5(a)

	1
--	---

5(b)(i)

	2
--	---

5(b)(ii)

	2
--	---

(c) (i) What will happen to the lime water in the gas jar?  
*Apakah yang akan berlaku terhadap air kapur dalam balang gas?*

.....

[1 mark]

5(c)(i)

	1
--	---

(ii) State one reason for your answer in (c)(i)?  
*Nyatakan satu alasan bagi jawapan anda dalam (c)(i)?*

.....

[1 mark]

5(c)(ii)

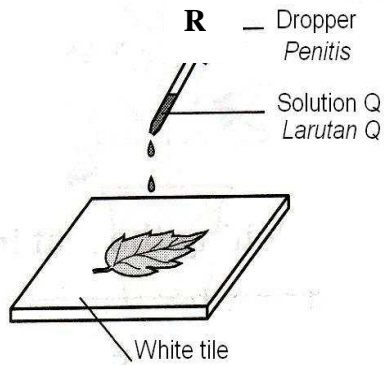
	1
--	---

Total

	7
--	---

6. Diagram 6.1 shows the steps in testing for the presence of starch in a green leaf.

Rajah 6.1 menunjukkan langkah-langkah untuk menguji kehadiran kanji dalam daun hijau.



Jubin putih

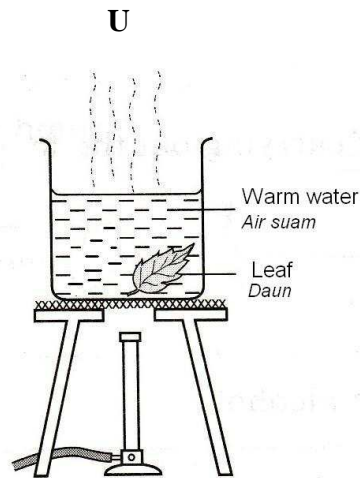
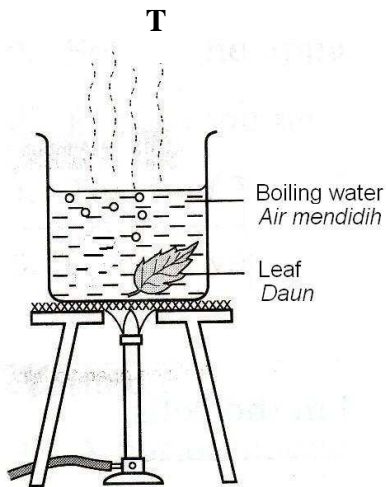
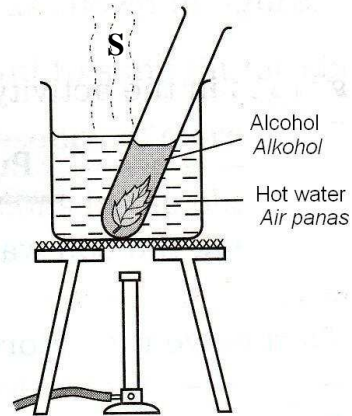
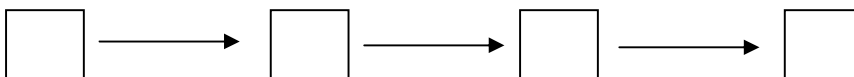


Diagram 6.1  
Rajah 6.1

a)(i) Arrange the steps in correct sequence by filling the boxes with the letters R, S, T and U.

Susunkan langkah-langkah dalam urutan yang betul dengan mengisi kotak dengan huruf R, S, T dan U.



[1 mark]

6(a)(i)

1

- (ii) Draw lines to match the steps with their purposes.  
*Lukiskan garisan untuk padankan langkah-langkah dengan tujuannya.*

R

To remove chlorophyll in the leaf  
*Untuk menyingkirkan kanji dalam daun*

S

To kill the cells and break the cell walls  
*Untuk membunuh sel dan memecahkan dinding sel*

To test for the presence of starch  
*Untuk menguji kehadiran kanji*

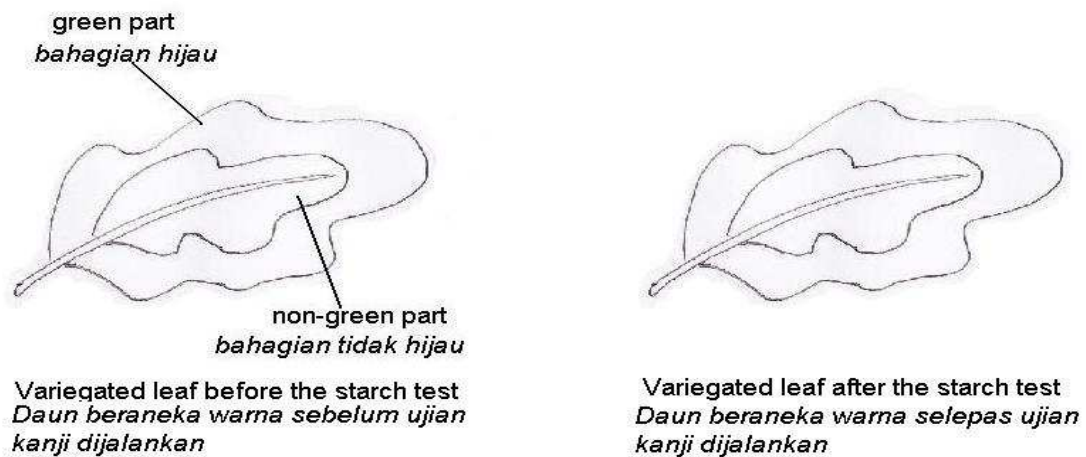
6(a)(ii)

2

[2 marks]

- b) Diagram 6.2 shows a variegated leaf which has been in the sun for a few hours.

*Rajah 6.2 menunjukkan sehelai daun beraneka warna yang telah didedahkan kepada cahaya matahari selama beberapa jam.*



6(b)(i)

1

Diagram 6.2  
Rajah 6.2

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- (i) Label **P** on Diagram 6.2 the part that will turn dark blue after step R has been conducted.

*Labelkan P pada Rajah 6.2 bahagian yang akan bertukar menjadi biru hitam setelah langkah R dijalankan.*

[1 mark]

6(b)(ii)

- (ii) What conclusion can be made after the solution Q is added onto the leaf.

*Apakah kesimpulan yang boleh dibuat apabila larutan Q ditambah kepada daun.*

.....

[1 mark]

1
---

- (d) State two importance of photosynthesis.

*Nyatakan satu kepentingan fotosintesis.*

i. ....

ii. ....

[2 marks]

6(d)

2
---

Total

7
---

**Part B**  
**Bahagian B**  
[20 marks]  
[20 markah]

Answer **all** questions.  
Jawab **semua** soalan.

7. Diagram 7 shows four types of plants.  
Rajah 7 menunjukkan empat jenis tumbuhan.

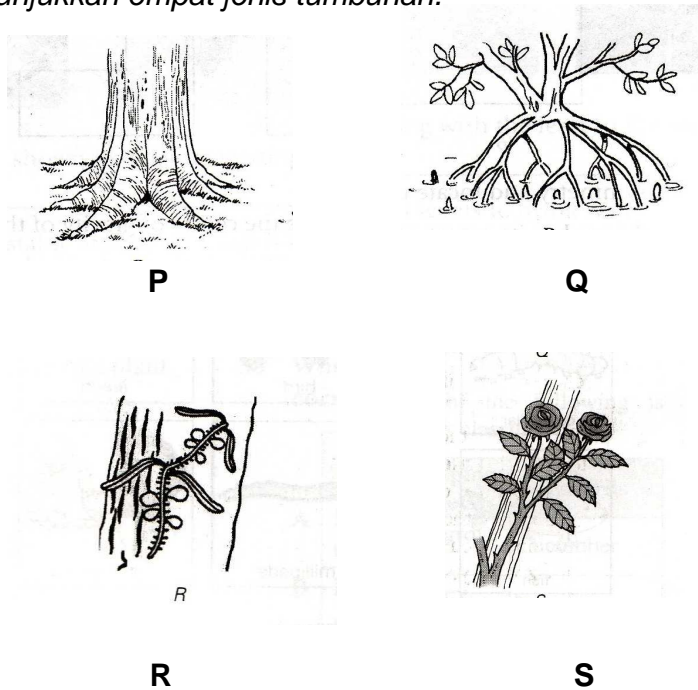


Diagram 7  
Rajah 7

Observe the plants in Diagram 7. Based on the observations,  
Perhatikan tumbuhan dalam Rajah 7. Berdasarkan pemerhatian

(a) State the type of support system for each of the plants.  
Nyatakan jenis sistem sokongan bagi setiap jenis tumbuhan.

- P:.....
- Q:.....
- R:.....
- S:.....

[4 marks]

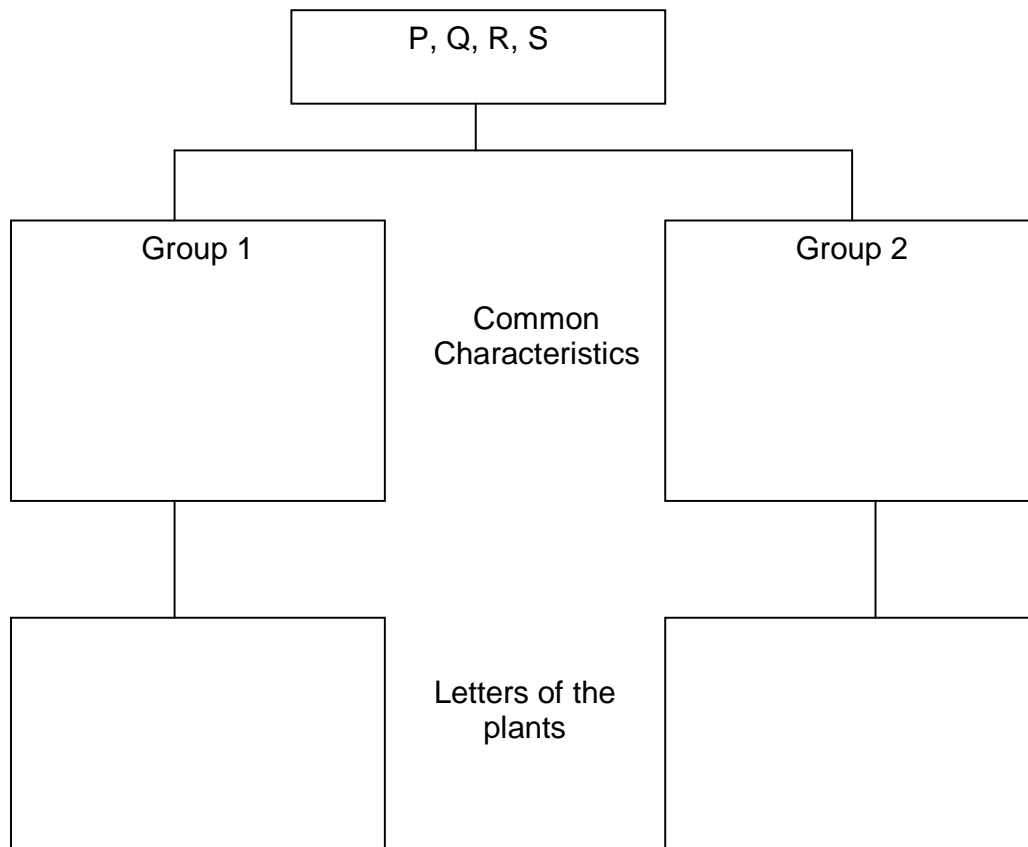
7(a)

4



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- (b) Classify the plants in Diagram 7 into two groups based on common characteristics.  
*Kelaskan tumbuhan dalam Rajah 7 kepada dua kumpulan berdasarkan ciri sepunya.*



[4 marks]

7(b)

	4
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Total

	8
--	---

8. (a) The diagram 8.1 below shows some wet clothes hung on a line under different conditions.  
*Rajah 8.1 di bawah menunjukkan beberapa pakaian yang basah di jemur di bawah keadaan yang berbeza.*

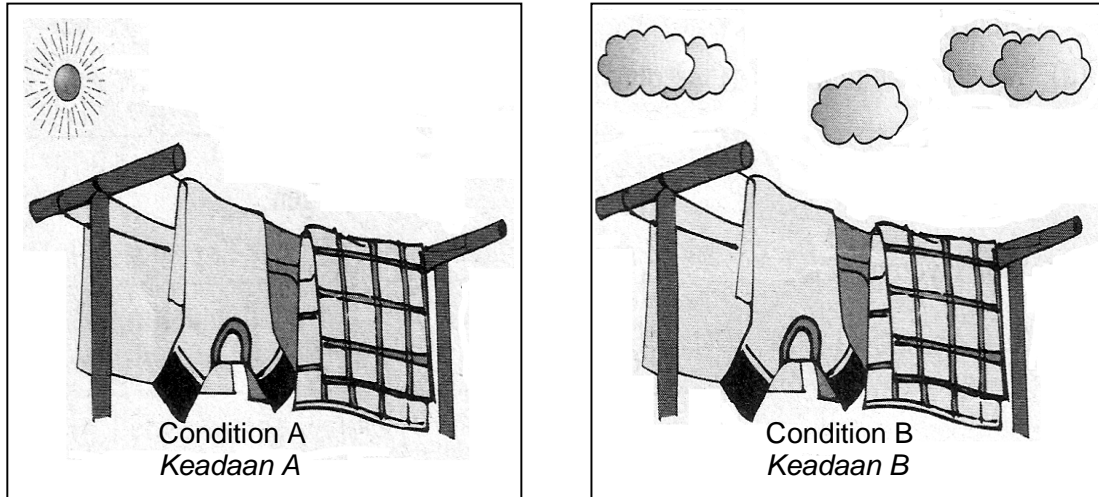


Diagram 8.1  
*Rajah 8.1*

- (i) Based on your observations in the diagram 8.1, state the difference in the time taken for the clothes to dry in Condition A and Condition B.  
*Berdasarkan kepada pemerhatian dalam rajah 8.1, nyatakan perbezaan dalam masa yang diambil untuk pakaian itu kering dalam keadaan A dan keadaan B.*

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

8(a)(i)

1

- (ii) What inference can be made based on Condition A and Condition B in the diagram above?  
*Apakah inferen yang boleh dibuat berdasarkan keadaan A dan keadaan B dalam rajah di atas?*

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

8(a)(ii)

1

(iii) State **one** hypothesis based on your observations in the diagram above.  
*Nyatakan satu hipotesis berdasarkan pemerhatian dalam rajah di atas.*

.....  
.....

[1 mark]

(b) A student carried out an experiment to investigate Condition A and Condition B. The diagram 8.2 shows an experiment to determine how the temperature of the surrounding affects the rate of evaporation.  
*Seorang pelajar menjalankan satu eksperimen untuk menyiasat keadaan A dan keadaan B. Rajah 8.2 menunjukkan satu eksperimen untuk menentukan bagaimana suhu persekitaran mempengaruhi kadar penyejatan.*

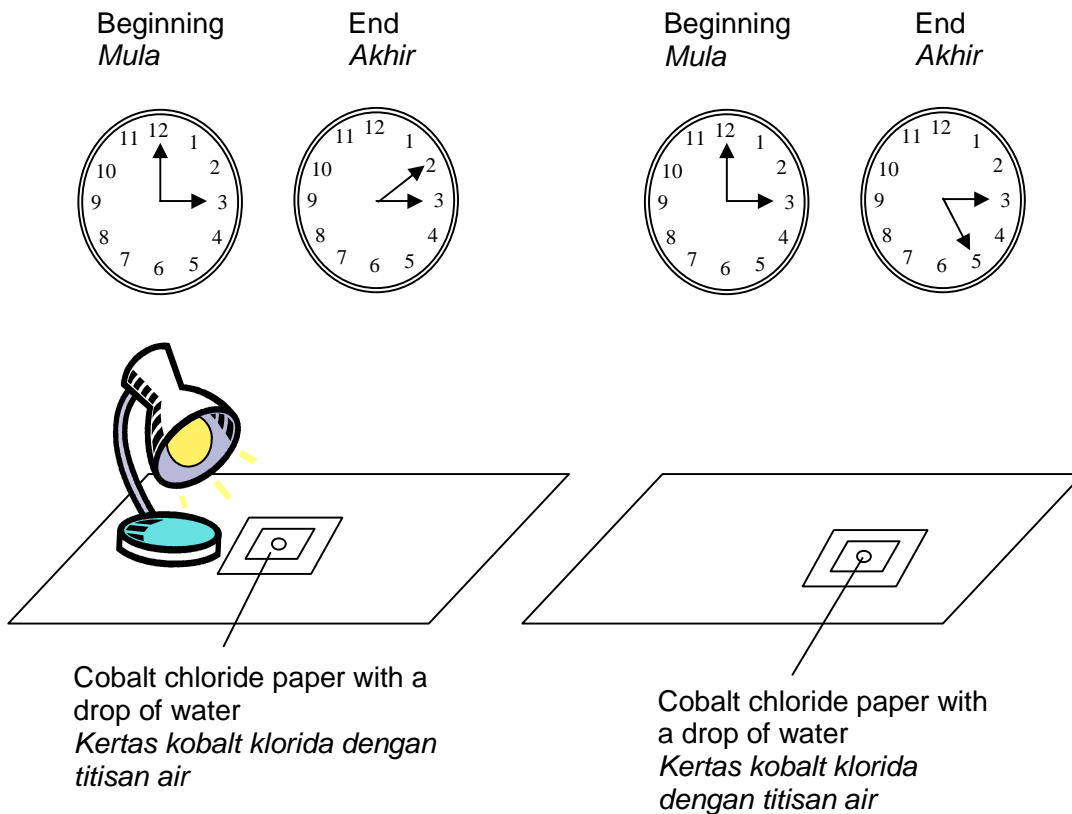


Diagram 8.2  
*Rajah 8.2*

Based on the diagram 8.2, record the time taken for the drop of water on the cobalt chloride paper to dry in the table below.  
*Berdasarkan kepada rajah 8.2, rekodkan masa yang diambil untuk titisan air di atas kertas kobalt klorida untuk mengering.*

8(a)(iii)

	1
--	---

<b>Condition</b> <b>Keadaan</b>	<b>Time taken for drop of water on the cobalt chloride paper to dry (min)</b> <b>Masa yang diambil untuk titisan air mengering di atas kertas kobalt klorida(min)</b>
With heat source <i>Dengan sumber haba</i>	
Without heat source <i>Tanpa sumber haba</i>	

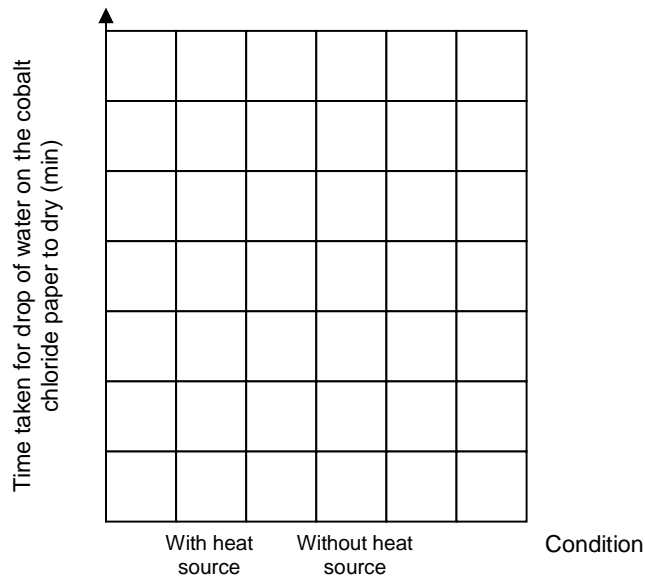
8(b)

2

[2 marks]

- (c) Based on the readings in the table above, draw a bar chart to show the time taken for the drop of water on the cobalt chloride paper to dry in different conditions.

*Berdasarkan kepada bacaan dalam jadual di atas, lukiskan carta bar untuk menunjukkan masa yang diambil untuk titisan air pada kertas kobalt klorida mengering dalam keadaan yang berbeza.*



[2 marks]

8(c)

2

- (d) Based on the bar chart in (c), what can be said about the time taken for the drop of water on the cobalt chloride paper to dry?

*Berdasarkan kepada carta bar di (c), apakah yang boleh dinyatakan tentang masa yang diambil oleh air untuk mengering di atas kertas kobalt klorida.*

.....

.....

[1 mark]

8(d)

1

- (e) Based on the experiment, state the relationship between the temperature of the surrounding and the rate of evaporation.  
*Berdasarkan kepada eksperimen, nyatakan hubungan diantara suhu persekitaran dengan kadar penyejatan.*

.....  
 .....

[1 mark]

8(e)

1

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

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

[3 marks]

8(f)

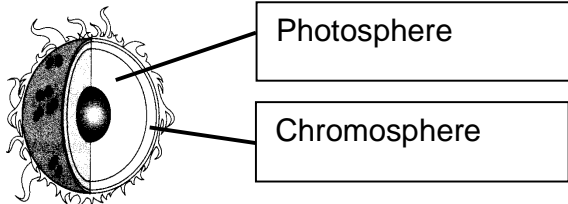
3

END OF QUESTION PAPER  
 KERTAS SOALAN TAMAT

Total

12

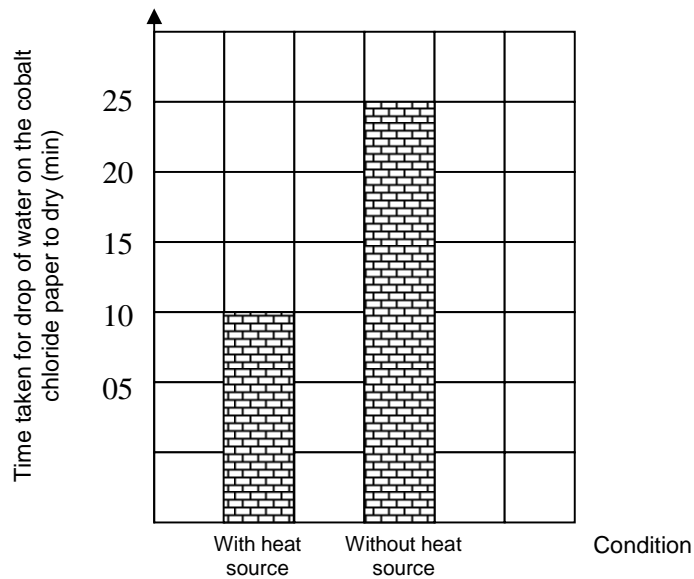
ANSWER SCHEME SCIENCE PAPER 2 TRIAL 2009

NO	RUBRIC	MARKS
1	(a) P – Measuring cylinder Q – Triple beam balance R – Spring balance  (b) Q – Measure the mass of an object R – Measure the weight of an object  (c) Lever balance// electronic balance	3x 1m = 3  2x 1m = 2  1m  Total = 6 m
2	(a)  <p style="text-align: center;">Q</p> (b)(i) Solar flare (ii) Disrupts radio wave// Changing the climate  (c) (i) Core (ii) Nuclear fusion	2x 1m = 2  1 m 1 m  1 m 1m  Total = 6 m
3	(a) J : Self pollination K : Cross pollination  (b) J Produce fruits/seeds which is same as parent plant while K produce a variety of fruits and seeds// K produce better plants than J// K produce plants that withstand against diseases better than J// Any suitable answer (c)(i) Fertilisation  (ii) Develop into fruit  (d) i. Vegetative reproduction ii. Stem cutting // tissue culture// cloning	1x 2m = 2  1 m  1 m  1 m  2 x 1m = 2  Total = 7

4	(a) Water Electrolysis (b) Carbon rod Y (c) Hydrogen gas (d) Use burning wooden splinter, produce 'pop' sound (e) $Q/P = ?/10$ $2/1 = ?/10$ $? = 2/1 \times 10$ $= 20 \text{ cm}$ (f) For respiration// combustion	1 m 1 m 1 m 1m 1 m ( method) 1m ( answer ) 1m Total = 7
5	(a) Lime water turns cloudy// water vapour form on the wall of gas jar (b)(i) i. Heat/ light energy ii. carbon dioxide iii. water vapour (any two) (b)(ii) <b>charcoal</b> + oxygen $\rightarrow$ <b>carbon dioxide</b> + energy (c)(i) turns cloudy/milky (ii) Carbon dioxide is released during combustion	1 m 2 x 1m = 2 2 x 1m = 2 1 m 1m Total = 7
6	(a)(i) T, S, U, R (ii) R – to test for the presence of starch S – to remove chlorophyll in the leaf (b)(i) Students labeled green part of the leaf with P (ii) Starch is present in green leaf by photosynthesis// Photosynthesis produced starch in green leaf (d)i. Produced food to the plants ii. Release oxygen to the air/surrounding iii. Maintain the balance of oxygen and carbon dioxide in the air	1 m 2 x 1m = 2 1 m 2 x 1 m = 2 Total = 7

7.	(a) P : Buttress root Q : Stilt root R : Clasping root S : Thorn	4 x 1m = 4						
	<p>(b)</p> <pre> graph TD     Root[P, Q, R, S] --&gt; Group1[Group 1 Has buttress root// Has stilt root// With tendrils (Any suitable answer)]     Root --&gt; Group2[Group 2 Not has buttress root// Not has stilt root// Without tendrils]     Group1 --&gt; P[P (According to classification)]     Group2 --&gt; QRS[Q, R, S]     </pre> <p style="text-align: center;">Common Characteristics</p> <p style="text-align: center;">Letters of the plants</p>	<p>2 x 1m = 2</p> <p>2 x 1m = 2</p> <p>Total = 8</p>						
8	<p>(a)(i) The clothes in Condition A dry faster than in Condition B</p> <p>(ii) Time taken for the clothes to dry depends on present of sunlight/ surrounding temperature</p> <p>(iii) The higher the temperature, the faster the cloth dry// As the temperature high, the cloth dry faster.</p> <p>(b)</p> <table border="1"> <thead> <tr> <th>Condition</th> <th>Time taken for drop of water to dry(min)</th> </tr> </thead> <tbody> <tr> <td>With heat source</td> <td>10</td> </tr> <tr> <td>Without heat source</td> <td>25</td> </tr> </tbody> </table> <p>(c)</p>	Condition	Time taken for drop of water to dry(min)	With heat source	10	Without heat source	25	<p>1 m</p> <p>1m</p> <p>1m</p> <p>2 x 1m = 2</p>
Condition	Time taken for drop of water to dry(min)							
With heat source	10							
Without heat source	25							





- (d) Drop of water on cobalt chloride paper with heat source dry faster compare to without heat source// Vice versa
- (e) The higher the temperature of surrounding the higher the rate of evaporation
- (f) Manipulated V – Present of heat source// lamp  
 Responding V – Time taken for the (cobalt chloride) paper to dry  
 Constant V – Size of cobalt chloride paper// Number of drop of water/ Volume of water drops