

55/1  
Science  
Paper 1  
August 2011  
1 hour



JABATAN PELAJARAN NEGERI PERAK

**PEPERIKSAAN PERCUBAAN  
PENILAIAN MENENGAH RENDAH  
NEGERI PERAK TAHUN 2011**

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**SCIENCE**

**PAPER 1**

1 hour

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**DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO**

1. This question paper consists of 40 questions.
2. Answer **all** questions.
3. Answer each question by blackening the correct space on the answer sheet.
4. Blacken only one space for each question.
5. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the space for your new answer.
6. The diagrams in the questions provided are not drawn to scale unless stated.
7. You may use a **non-programmable** scientific calculator.

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**This question paper consists 16 printed pages**

1. Diagram 1 shows a hazard symbol of a chemical substance.  
*Rajah 1 menunjukkan satu simbol amaran berbahaya untuk satu bahan kimia.*



Diagram 1 / *Rajah 1*

Which of the following is the correct example of the chemical?  
*Antara berikut contoh bahan kimia manakah yang betul?*

- A. Sodium / *Natrium*  
 B. Ethanol / *Etanol*  
 C. Ammonia / *Ammonia*  
 D. Uranium / *Uranium*
2. Diagram 2 shows the structure of a cell.  
*Rajah 2 menunjukkan struktur satu sel.*

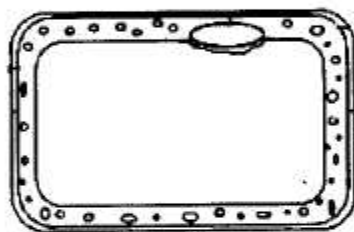


Diagram 2 / *Rajah 2*

Which organism has this type of cell?  
*Organisma manakah yang mempunyai sel jenis ini?*

- A. Rabbit / *Arnab*  
 B. Beetle / *Kumbang*  
 C. Caterpillar / *Beluncas*  
 D. Balsam plant / *Keembung*
3. Diagram 3 shows the classification of matter.  
*Rajah 3 menunjukkan pengelasan jirim.*

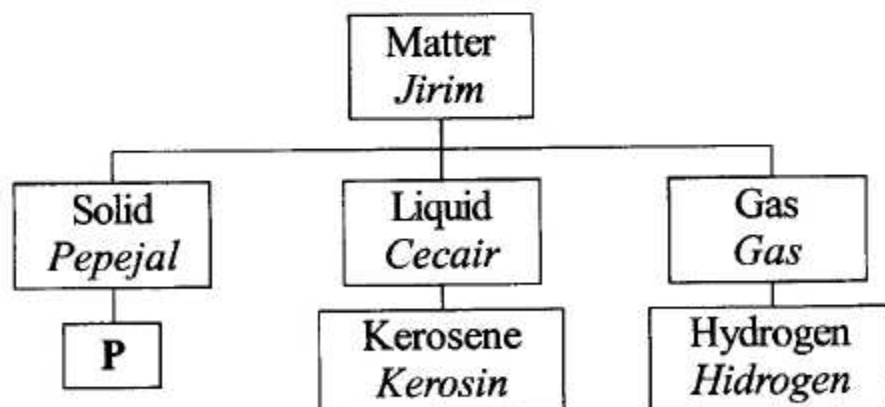


Diagram 3 / *Rajah 3*

**P** represents / **P** mewakili

- A. cork / *gabus*  
 B. oxygen / *oksigen*  
 C. diesel / *disel*  
 D. turpentine / *turpentin*



4. Diagram 4 shows two balloons being balanced on a stick.  
*Rajah 4 menunjukkan dua belon yang diseimbangkan pada sebatang kayu.*

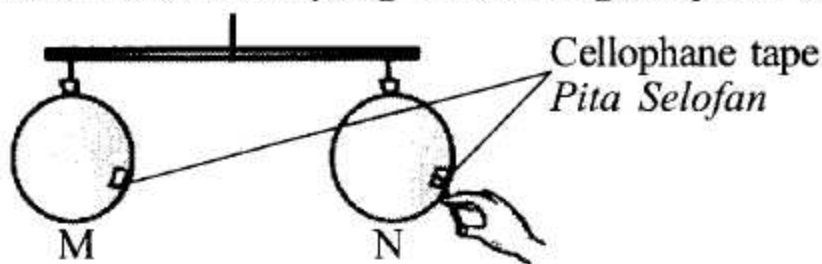
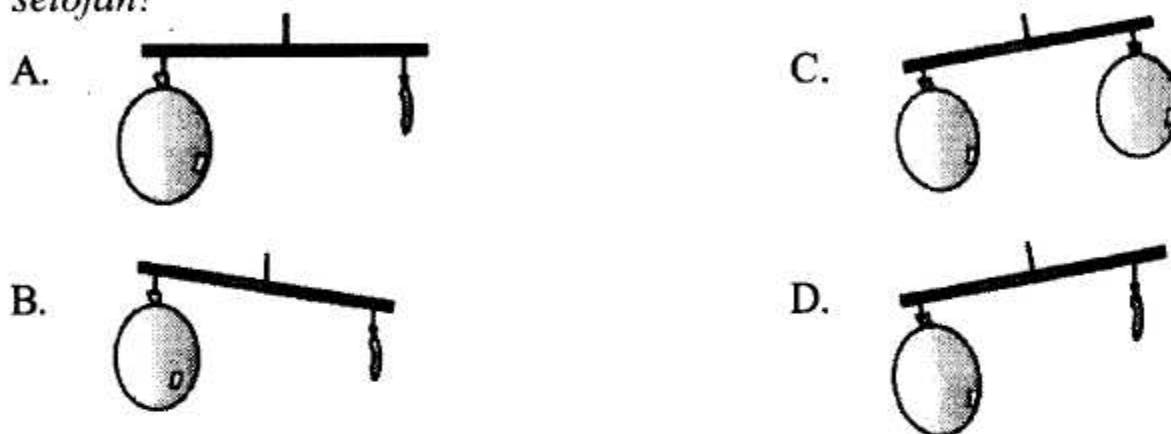


Diagram 4 / Rajah 4

What will happen if balloon N is poked with a pin through the cellophane tape?

*Apakah yang akan berlaku jika belon N dicucuk dengan satu jarum peniti menembusi pita selofan?*



5. The following list contains the names of some metals and non-metals.  
*Maklumat berikut mengandungi senarai beberapa logam dan bukan logam.*

Carbon	Iron	Mercury	Sulphur
<i>Karbon</i>	<i>Besi</i>	<i>Merkuri</i>	<i>Sulfur</i>

Which of the following classification is correct?

*Antara berikut pengelasan manakah yang betul?*

	<b>Metal / Logam</b>	<b>Non-metal / Bukan logam</b>
A	Carbon, Iron <i>Karbon, Besi</i>	Mercury, Sulphur <i>Merkuri, Sulfur</i>
B	Mercury, Iron <i>Merkuri, Besi</i>	Carbon, Sulphur <i>Karbon, Sulfur</i>
C	Mercury, Sulphur <i>Merkuri, Sulfur</i>	Carbon, Iron <i>Karbon, Besi</i>
D	Carbon, Sulphur <i>Karbon, Sulfur</i>	Mercury, Iron <i>Merkuri, Besi</i>

6. Diagram 5 shows the component of gases in the air.  
*Rajah 5 menunjukkan komposisi gas dalam udara.*

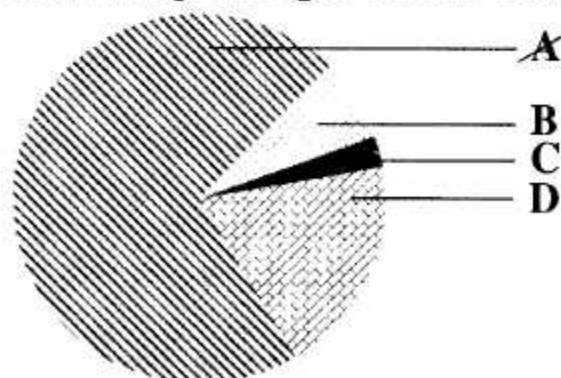


Diagram 5 / Rajah 5

Which of the parts labelled A, B, C and D is nitrogen?

*Antara bahagian berlabel A, B, C dan D yang manakah adalah nitrogen?*

7. Diagram 6 shows an experiment to investigate the gas released during photosynthesis.  
*Rajah 6 menunjukkan eksperimen untuk mengkaji gas yang dibebaskan semasa fotosintesis.*

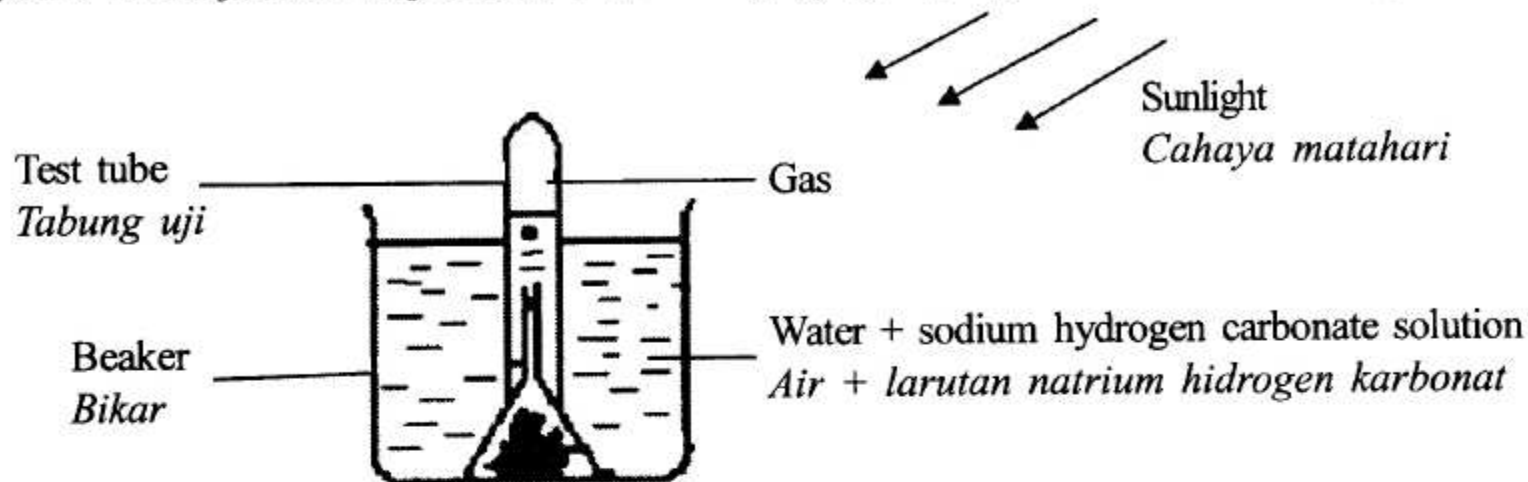


Diagram 6 / Rajah 6

Which is the most suitable test for the gas collected in the test tube?

*Antara berikut manakah paling sesuai untuk menguji gas yang terkumpul dalam tabung uji?*

- Lime water / *Air kapur*
  - Red litmus paper / *Kertas litmus merah*
  - Glowing wooden splinter / *Kayu uji berbara*
  - Bicarbonate indicator / *Penunjuk bikarbonat*
8. The following information shows examples sources energy that can be renewed.  
*Maklumat berikut menunjukkan contoh-contoh sumber tenaga yang boleh diperbaharui.*

- Dried leaves / *Daun-daun kering*
- Decayed wood / *Kayu reput*
- Faeces of farm animal / *Najis haiwan ternakan*

Name the type of energy source.

*Namakan sumber tenaga ini.*

- Coal / *Arangbatu*
  - Biomass / *Biomass*
  - Natural gas / *Gas asli*
  - Geothermal / *Geoterma*
9. Table 1 shows the result of an experiment.  
*Jadual 1 menunjukkan keputusan satu eksperimen.*

Beaker / <i>Bikar</i>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Volume of water ( $\text{cm}^3$ ) <i>Isipadu air ( <math>\text{cm}^3</math> )</i>	150	80	150	90
Temperature ( $^{\circ}\text{C}$ ) <i>Suhu ( <math>^{\circ}\text{C}</math> )</i>	100	100	60	60

Table 1 / *Jadual 1*

Which beaker labelled A, B, C and D contain the most heat?

*Bikar berlabel A, B, C dan D manakah mengandungi haba paling tinggi?*



10. Diagram 7 shows a cup of hot coffee.  
Rajah 7 menunjukkan secawan kopi panas.



Diagram 7 / Rajah 7

Which methods cause heat lost from the coffee?

Kaedah manakah menyebabkan haba hilang daripada kopi panas itu?

- A. Conduction and convection / Konduksi dan perolakan  
B. Convection and radiation / Perolakan dan sinaran  
C. Radiation and reflection / Sinaran dan pantulan  
D. Conduction and reflection / Konduksi dan pantulan
11. Diagram 8 shows the pathway from stimulus to response.  
Rajah 8 menunjukkan laluan daripada rangsangan kepada tindak balas.

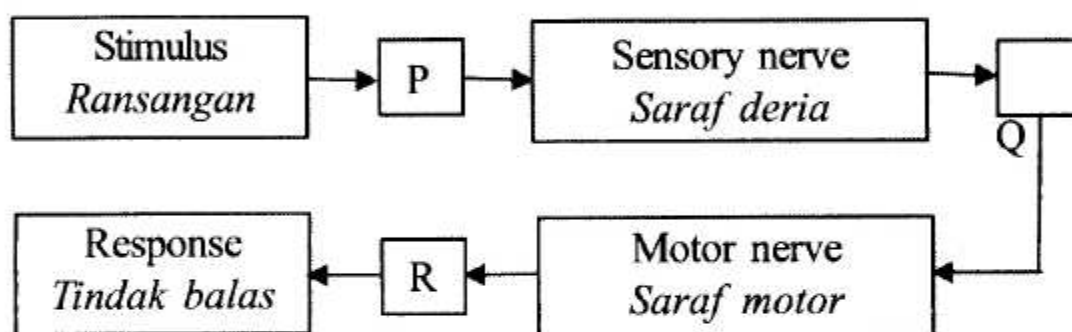


Diagram 8 / Rajah 8

What are represented by P, Q and R?

Apakah yang diwakili oleh P, Q dan R?

	P	Q	R
A	Effector / Efektor	Brain / Otak	Receptor / Reseptor
B	Brain / Otak	Effector / Efektor	Receptor / Reseptor
C	Receptor / Reseptor	Brain / Otak	Effector / Efektor
D	Receptor / Reseptor	Effector / Efektor	Brain / Otak

12. Diagram 9 shows some food samples.  
Rajah 9 menunjukkan beberapa contoh makanan.

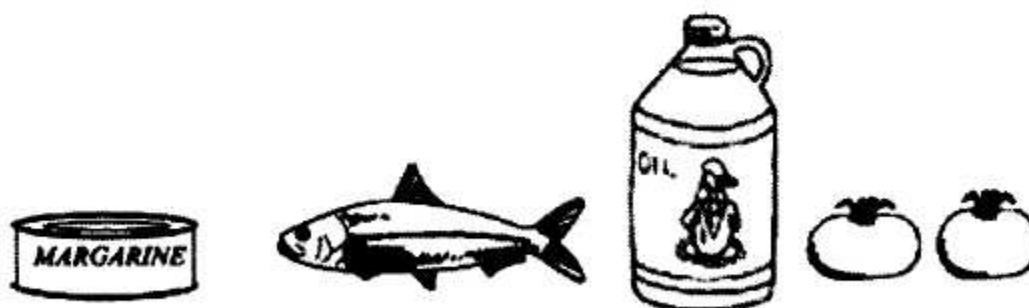


Diagram 9 / Rajah 9

Which food contain high amount of fats?

Makanan manakah mengandungi jumlah lemak yang tinggi?

- A. Fish and oil / Ikan dan minyak  
B. Margarine and oil / Marjerin dan minyak  
C. Fish and vegetables / Ikan dan sayur-sayuran  
D. Margarine and vegetables / Marjerin dan sayur-sayuran

13. Table 2 shows the functions and the effects of deficiency of minerals X, Y and Z.

*Jadual 2 menunjukkan fungsi dan kesan kekurangan mineral X, Y dan Z.*

Mineral <i>Mineral</i>	Function <i>Fungsi</i>	Effect of deficiency <i>Kesan kekurangan</i>
X	Formation of haemoglobin in red blood cells <i>Pembentukan hemoglobin dalam sel darah merah</i>	Anaemia <i>Anemia</i>
Y	Helps to produce thyroxine hormone <i>Membantu untuk menghasilkan hormon tiroksin</i>	Goitre <i>Goiter</i>
Z	Build strong bones and teeth <i>Membina tulang dan gigi yang kuat</i>	Rickets <i>Riket</i>

Table 2 / *Jadual 2*

What are represented by X, Y and Z?

*Apakah yang diwakili oleh X, Y dan Z?*

	X	Y	Z
A	Iron / <i>Besi</i>	Calcium / <i>Kalsium</i>	Iodine / <i>Iodin</i>
B	Calcium / <i>Kalsium</i>	Iron / <i>Besi</i>	Phosphorus / <i>Fosforus</i>
C	Iron / <i>Besi</i>	Iodine / <i>Iodin</i>	Calcium / <i>Kalsium</i>
D	Calcium / <i>Kalsium</i>	Iodine / <i>Iodin</i>	Iron / <i>Besi</i>

14. Table 3 shows the calorific values of some food in Zizan's breakfast.

*Jadual 3 menunjukkan nilai kalori dalam sarapan pagi Zizan.*

Food <i>Makanan</i>	Calorific value <i>Nilai kalori</i>
Kampung fried rice <i>Nasi goreng kampung</i>	1900J per plate <i>1900J sepinggan</i>
Watermelon juice <i>Jus tembikai</i>	220J per glass <i>220J segelas</i>
Kuih seri muka <i>Kuih seri muka</i>	250J per piece <i>250J sepotong</i>

Table 3 / *Jadual 3*

If Zizan take a plate of kampung fried rice, one glass of watermelon juice and 2 pieces of kuih seri muka, calculate the total calorific value in Zizan's breakfast.

*Jika Zizan mengambil sepinggan nasi goreng kampung, segelas jus tembikai dan 2 potong kuih seri muka, hitungkan jumlah nilai kalori dalam sarapan pagi Zizan.*

- A. 2370 J
- B. 2590 J
- C. 2620 J
- D. 2840 J



15. Which of the following plants belongs to monocotyledon?

*Antara tumbuhan yang berikut, yang manakah monokotiledon?*

A



C



B



D



16. Table 4 shows the population of organisms *S*, *T*, *U* and *V* in a habitat.

*Jadual 4 menunjukkan populasi organisma S, T, U dan V dalam satu habitat.*

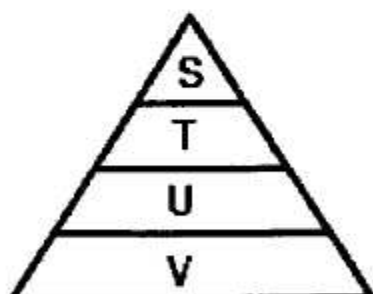
Organism <i>Organisma</i>	Number <i>Bilangan</i>
<i>S</i>	1200
<i>T</i>	60
<i>U</i>	3 560
<i>V</i>	430

Table 4 / *Jadual 4*

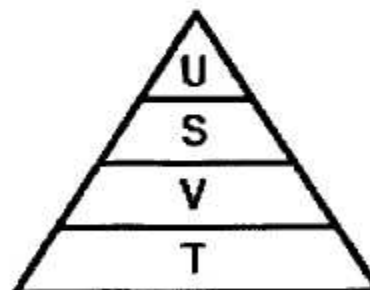
Which pyramids of number is correct?

*Piramid nombor manakah yang betul?*

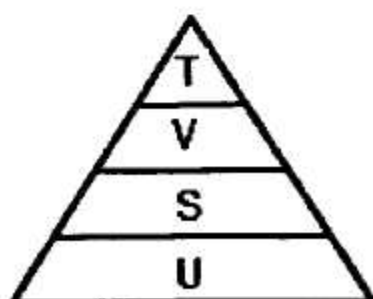
A



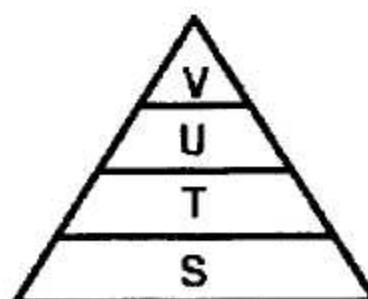
C



B



D



17. Diagram 10 shows four forms of sugar. The mass of each form is 15 g.  
*Rajah 10 menunjukkan empat bentuk gula. Setiap satunya berjisim 15 g.*

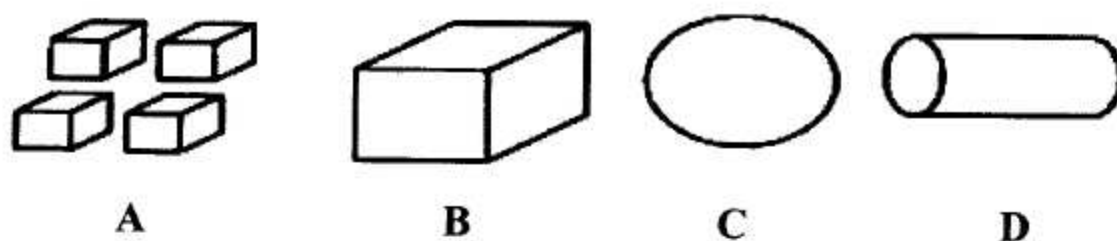


Diagram 10 / Rajah 10

Which of the following form of sugar A, B, C or D will dissolve the fastest?  
*Antara bentuk gula, A, B, C atau D berikut, yang manakah larut paling cepat?*

18. Diagram 11 shows an experiment to determine the effect of impurities on the boiling point of water.  
*Rajah 11 menunjukkan satu eksperimen untuk menentukan kesan bendasing terhadap takat didih air.*

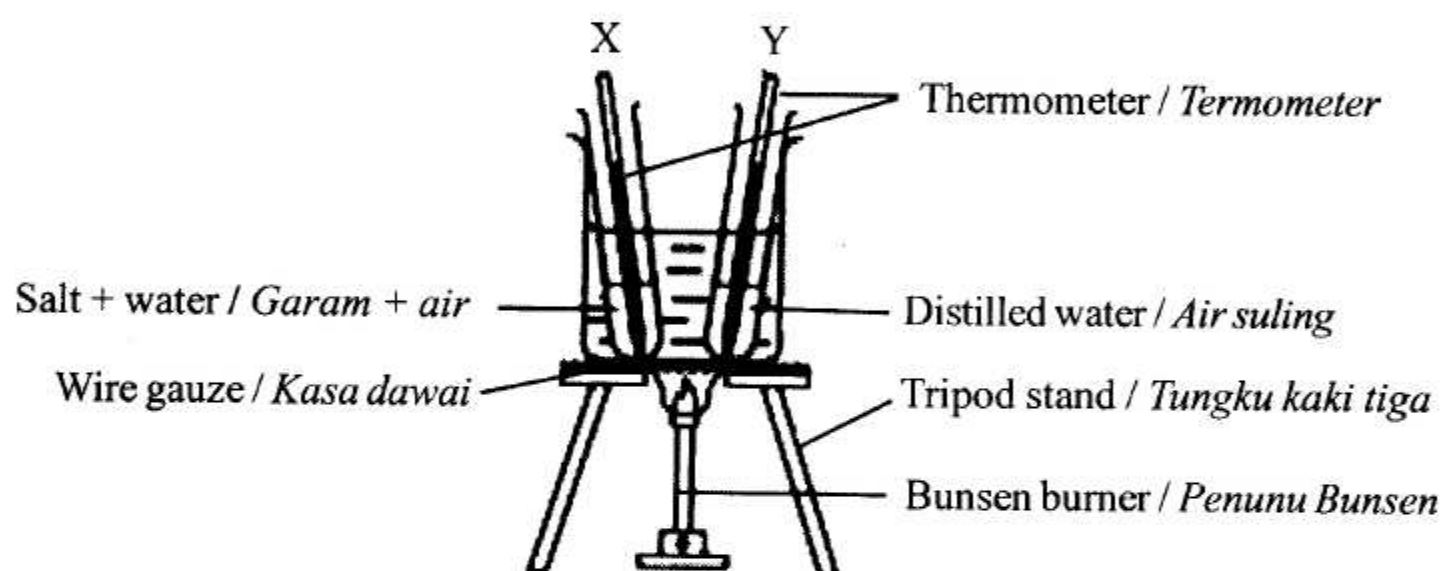


Diagram 11 / Rajah 11

What are the boiling points of the solutions in test tubes X and Y?  
*Apakah takat didih larutan dalam tabung uji X dan Y?*

	X(°C)	Y (°C)
A	98	100
B	98	102
C	100	100
D	102	100

19. Which of the following human activities does **not** involve friction?  
*Antara aktiviti berikut, yang manakah **tidak** melibatkan geseran?*

- A. Climbing a hill / Mendaki bukit  
 B. Playing a violin / Menggesek biola  
 C. Writing a letter / Menulis sepucuk surat  
 D. Watching a movie 'Hantu Kak Limah Balik Rumah' /  
 Menonton filem 'Hantu Kak Limah Balik Rumah'



20. Diagram 12 shows the pH values of two substances.  
*Rajah 12 menunjukkan nilai pH bagi dua bahan.*

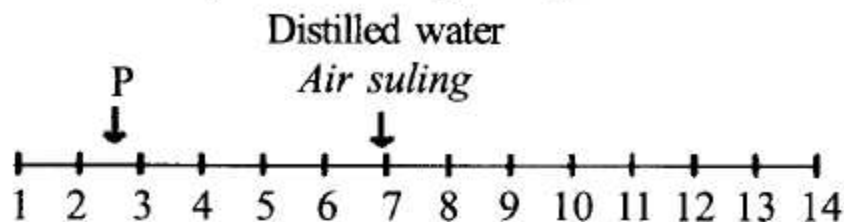


Diagram 12 / Rajah 12

What is P? / Apakah P?

- A. Lemon / Lemon  
 B. Sea water / Air laut  
 C. Detergent / Detergen  
 D. Fresh milk / Susu segar
21. Diagram 13 shows a hard-boiled egg placed at the mouth of a conical flask with a burning candle inside. After some time, the flame extinguished and the egg falls into the flask.  
*Rajah 13 menunjukkan sebiji telur rebus diletakkan di mulut kelalang kon yang mengandungi lilin menyala di dalamnya. Selepas seketika, nyalaan api terpadam dan telur jatuh ke dalam kelalang itu.*

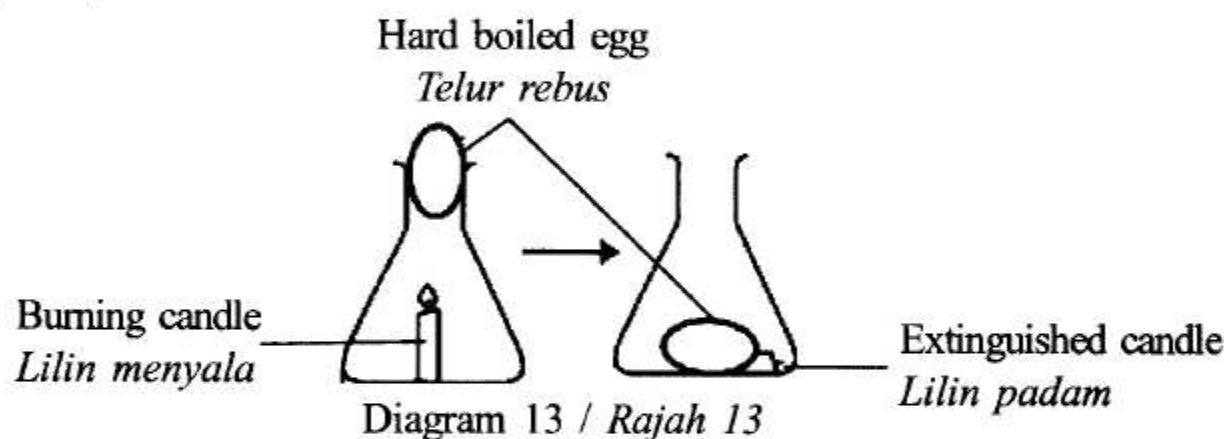


Diagram 13 / Rajah 13

What causes the egg to fall?

*Apakah yang menyebabkan telur itu jatuh?*

- A. The egg dried out and shrunk.  
*Telur itu mengering dan mengecut.*  
 B. The conical flask expanded.  
*Kelalang kon itu mengembang.*  
 C. The air pressure outside the conical flask decreased.  
*Tekanan udara di luar kelalang kon itu berkurang.*  
 D. The air pressure inside the conical flask decreased.  
*Tekanan udara di dalam kelalang kon itu berkurang.*
22. Diagram 14 shows a man holding a fishing rod.  
*Rajah 14 menunjukkan seorang lelaki memegang sebatang joran.*

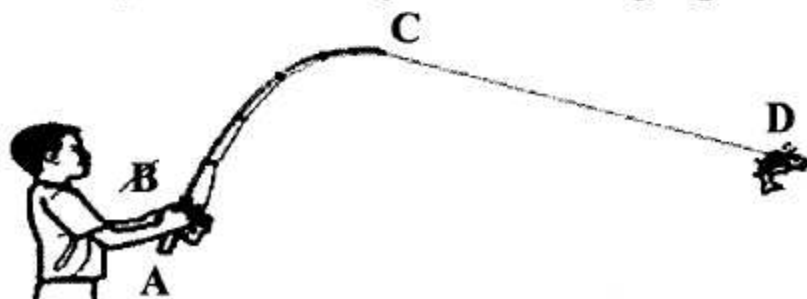
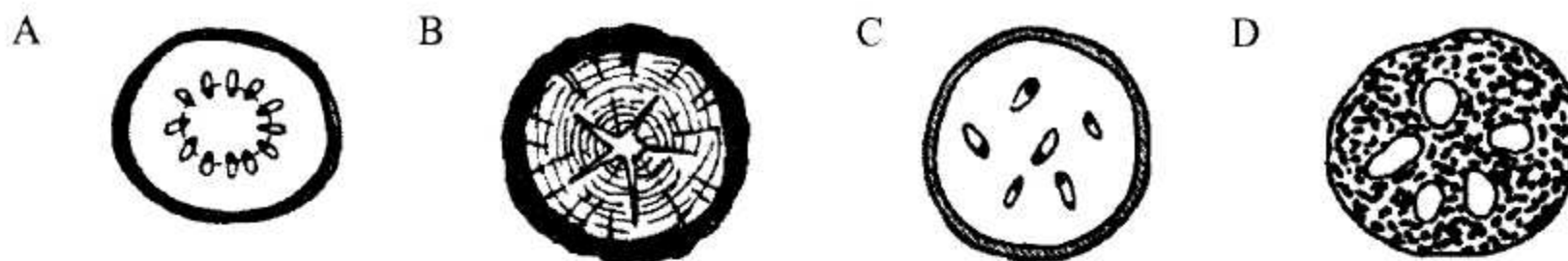


Diagram 14 / Rajah 14

Which of the parts labelled A, B, C or D is the effort?

*Antara bahagian berlabel A, B, C atau D, yang manakah merupakan daya?*

23. Which diagram shows the correct cross section of a lotus stem?  
*Rajah yang manakah menunjukkan keratan rentas batang pokok teratai?*



24. Diagram 15 shows modification of a table from condition M to N.  
*Rajah 15 menunjukkan pengubahsuaian sebuah meja dari keadaan M ke N.*

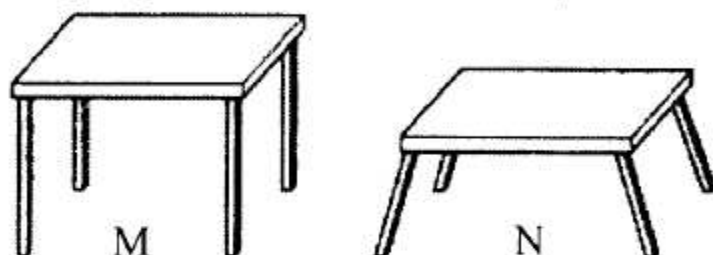


Diagram 15 / Rajah 15

What is the effect of modification on the base area and centre of gravity of the table?  
*Apakah kesan pengubahsuaian ini terhadap luas tapak dan pusat graviti meja?*

	Base area <i>Luas permukaan tapak</i>	Height of centre of gravity <i>Ketinggian pusat graviti</i>
A	Decrease / <i>Berkurang</i>	Increase / <i>Bertambah</i>
B	Increase / <i>Bertambah</i>	Increase / <i>Bertambah</i>
C	Increase / <i>Bertambah</i>	Decrease / <i>Berkurang</i>
D	Decrease / <i>Berkurang</i>	Decrease / <i>Berkurang</i>

25. Diagram 16 shows a simple machine used to lift the sand.  
*Rajah 16 menunjukkan mesin ringkas yang digunakan untuk mengangkat pasir.*

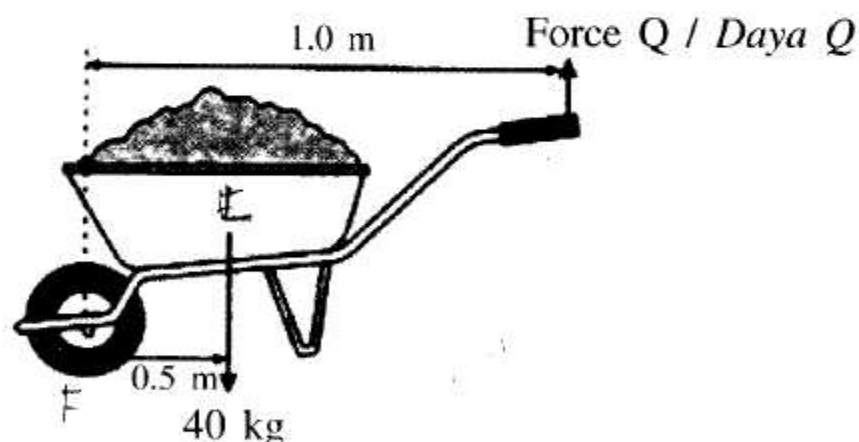


Diagram 16 / Rajah 16

Calculate the force Q needed to lift 40 kg of sand.  
*Hitung daya Q yang diperlukan untuk mengangkat 40 kg pasir.*  
 Given : 1 kg = 10 N / *Diberi : 1 kg = 10 N*

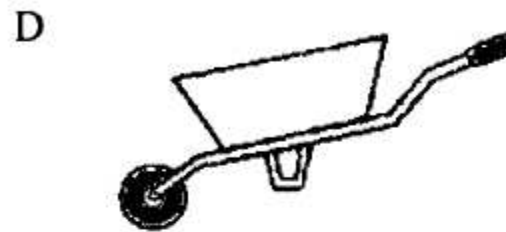
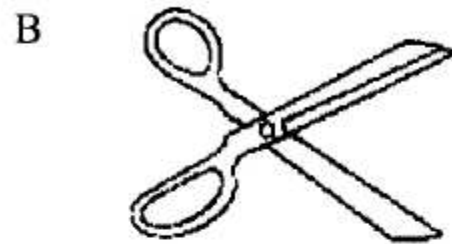
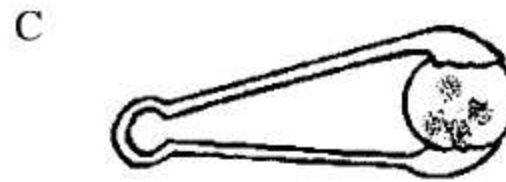
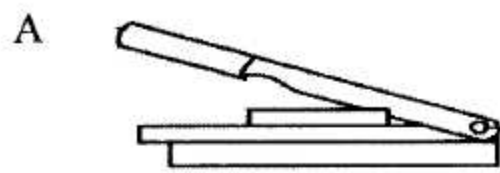
Load (N)	x	Distance of load from the fulcrum (m)	=	Effort (N)	x	Distance of effort from the fulcrum (m)
<i>Beban (N)</i>	<i>x</i>	<i>Jarak beban dari fulkrum (m)</i>	<i>=</i>	<i>Daya (N)</i>	<i>x</i>	<i>Jarak daya dari fulkrum (m)</i>

- A. 200 N  
 B. 300 N  
 C. 500 N  
 D. 700 N



26. Which levers in use will need an effort greater than the load?

*Tuas manakah memerlukan daya lebih besar daripada beban semasa digunakan?*



27. Diagram 17 shows a model of the human respiratory system.

*Rajah 17 menunjukkan satu model sistem respirasi manusia.*

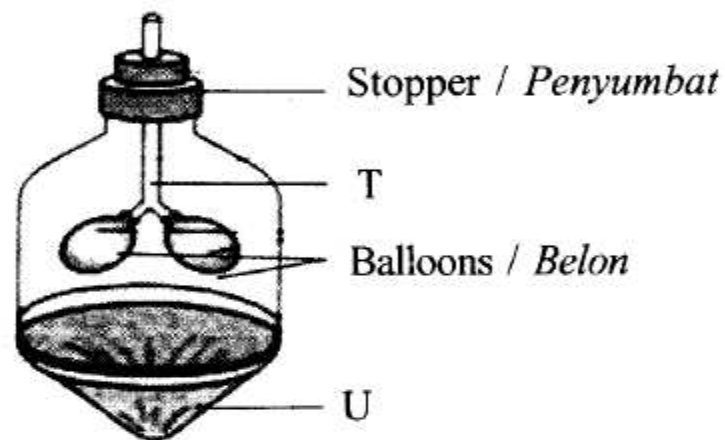


Diagram 17 / Rajah 17

What are T and U?

*Apakah T dan U?*

	T	U
A	Trachea / trakea	Diaphragm / Diafragma
B	Trachea / trakea	Lungs / Peparu
C	Lungs / Peparu	Diaphragm / Diafragma
D	Lungs / Peparu	Thoracic cavity / Rongga toraks

28. Table 5 shows the characteristics of blood vessels, P, Q and R.

*Jadual 5 menunjukkan ciri-ciri salur darah, P, Q dan R.*

Characteristics <i>Ciri-ciri</i>	Types of blood vessel <i>Jenis salur darah</i>		
	P	Q	R
Presence of valves <i>Kewujudan injap</i>	Present <i>Ada</i>	Absent <i>Tiada</i>	Absent <i>Tiada</i>
Thickness of wall <i>Ketebalan dinding</i>	Thin <i>Nipis</i>	Thick <i>Tebal</i>	One cell thick <i>Setebal satu sel</i>
Size of lumen <i>Saiz lumen</i>	Large <i>Besar</i>	Small <i>Kecil</i>	Very small <i>Sangat kecil</i>

Table 5 / *Jadual 5*

What are P, Q and R?

*Apakah P, Q dan R?*

	P	Q	R
A	Artery / <i>Arteri</i>	Vein / <i>Vena</i>	Capillary / <i>Kapilari</i>
B	Capillary / <i>Kapilari</i>	Artery / <i>Arteri</i>	Vein / <i>Vena</i>
C	Vein / <i>Vena</i>	Capillary / <i>Kapilari</i>	Artery / <i>Arteri</i>
D	Vein / <i>Vena</i>	Artery / <i>Arteri</i>	Capillary / <i>Kapilari</i>

29. Diagram 18 shows a cross section of dicotyledenous root of a plant.

*Rajah 18 menunjukkan keratan rentas akar satu tumbuhan dikotiledon.*

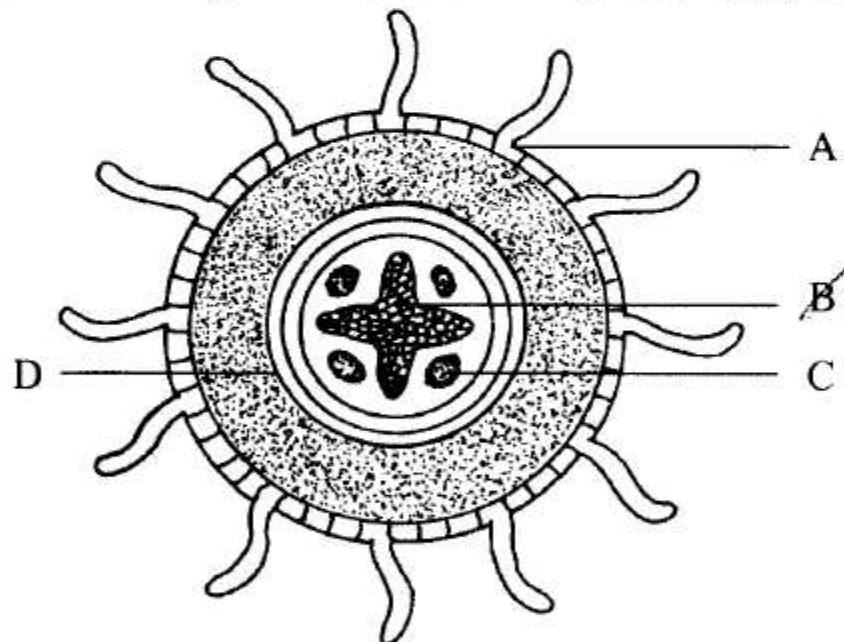


Diagram 18 / *Rajah 18*





Which of the parts labeled A, B, C and D transport water and minerals to the whole part of the plant?

*Antara struktur A, B, C dan D manakah yang digunakan untuk mengangkut air dan garam mineral ke seluruh bahagian pokok?*



30. The human excretory system consists of several organs. Which of the excretory organ is matched correctly to its product?

*Sistem perkumuhan manusia terdiri daripada beberapa organ. Antara yang berikut, manakah dipadankan dengan betul?*

	Organ	Products / Hasil
A		Water, mineral salts and urea <i>Air, garam mineral dan urea</i>
B		Oxygen and water <i>Oksigen dan air</i>
C		Water and mineral salts <i>Air dan garam mineral</i>
D		Oxygenated blood and deoxygenated blood <i>Darah beroksigen dan darah terdeoksigen</i>

31. Diagram 19 shows a foetus in the uterus.  
*Rajah 19 menunjukkan fetus dalam uterus.*

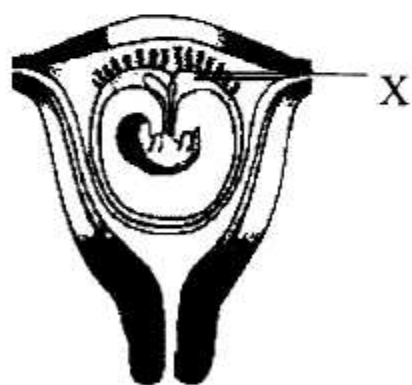


Diagram 19 / Rajah 19

Which of the following are the functions of the part labelled X?  
*Antara berikut manakah fungsi-fungsi bahagian yang berlabel X?*

- I Supplies oxygen to the foetus / *Membekalkan oksigen kepada fetus*
  - II Excretes waste products from the foetus / *Menyingkirkan bahan kumuh daripada fetus*
  - III Transfers dissolved nutrient to the foetus / *Memindahkan nutrien terlarut ke dalam fetus*
- A. I and II only  
B. I and III only  
C. II and III only  
D. I, II and III





35. Diagram 22 shows an experiment to study the reaction between metal and non-metal.  
*Rajah 22 menunjukkan susunan radas untuk satu eksperimen untuk mengkaji tindak balas antara logam dan bukan logam.*

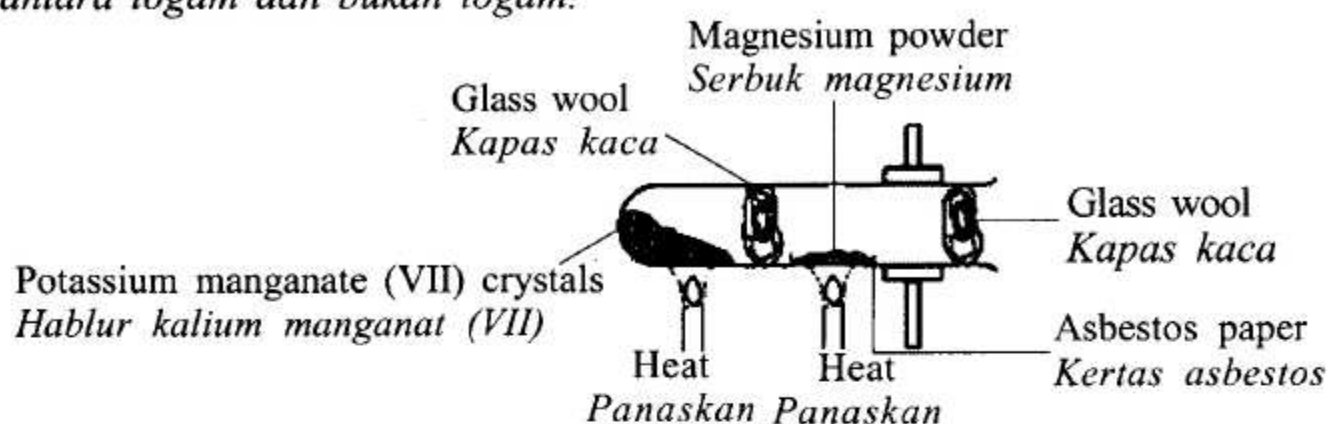


Diagram 22 / Rajah 22

What is the function of potassium manganate (VII) crystals?  
*Apakah fungsi hablur kalium manganat (VII)?*

- A. To absorb moisture / untuk menyerap lembapan  
 B. To release oxygen / untuk membebaskan oksigen  
 C. To absorb carbon dioxide / untuk menyerap karbon dioksida  
 D. To produce heat energy / untuk menghasilkan tenaga haba
36. Diagram 23 shows an electric circuit with five bulbs.  
*Rajah 23 menunjukkan satu litar elektrik dengan lima mentol.*

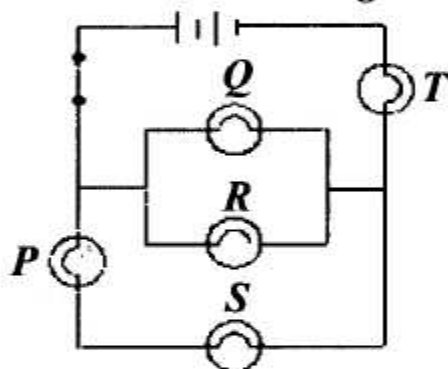


Diagram 23 / Rajah 23

Which of the following bulbs will continue to light up if bulb P blows?  
*Antara mentol yang berikut, manakah akan tetap menyala jika mentol P terbakar?*

- A. S and T only / S dan T sahaja  
 B. Q, R and T only / Q, R dan T sahaja  
 C. Q, R and S only / Q, R dan S sahaja  
 D. Q, R, S and T / Q, R, S dan T
37. Diagram 24 shows an electric circuit.  
*Rajah 24 menunjukkan satu litar elektrik.*

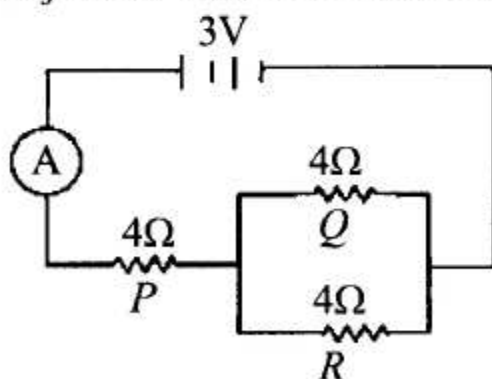


Diagram 24 / Rajah 24

P, Q and R are three identical resistors. What is the reading of the ammeter?  
*P, Q, dan R adalah tiga perintang yang serupa. Berapakah bacaan ammeter itu?*

- A. 0.25 A  
 B. 0.50 A  
 C. 0.75 A  
 D. 0.80 A

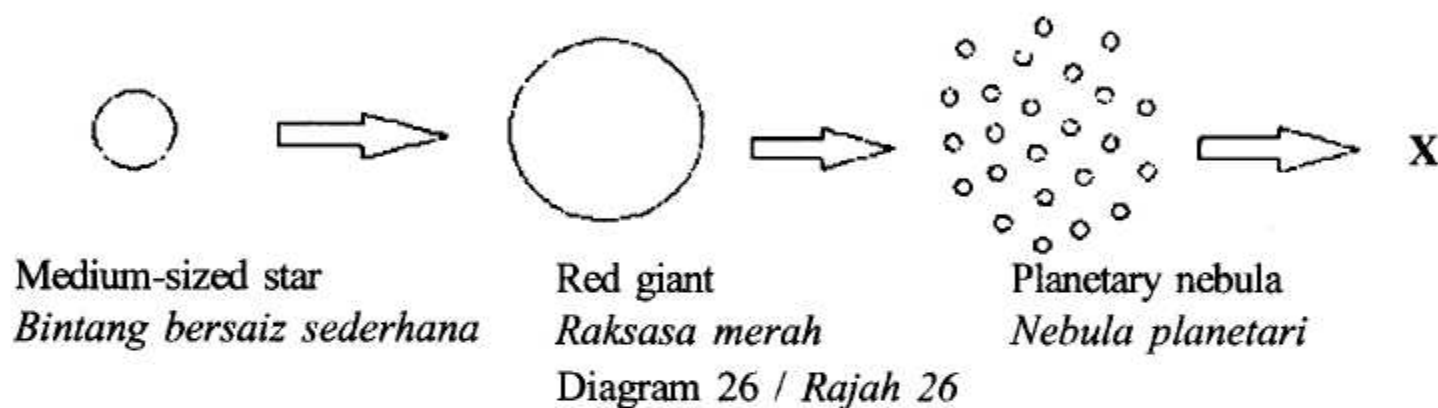
38. Diagram 25 shows a hydroelectric generator.  
*Rajah 25 menunjukkan sebuah janakuasa hidroelektrik.*



Diagram 25 / Rajah 25

Which parts labelled A, B, C and D is turbine?  
*Bahagian manakah yang berlabel A, B, C dan D adalah turbin?*

39. Diagram 26 shows the death of medium-sized star.  
*Rajah 26 menunjukkan kematian bintang bersaiz sederhana.*



What is X? / Apakah X?

- A. Nebula / Nebula  
 B. White dwarf / Kerdil putih  
 C. Neutron star / Bintang neutron  
 D. Black hole / Lohong hitam
40. Diagram 27 shows a robot-like object that is sent to outerspace.  
*Rajah 27 menunjukkan satu objek yang mirip robot dihantar ke angkasa lepas.*

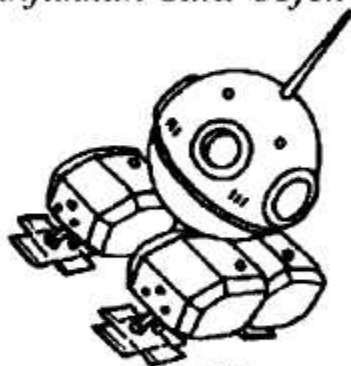


Diagram 27 / Rajah 27

Which of the following are the functions of the object?  
*Antara yang berikut, manakah fungsi objek itu?*

- I. To gather information and send images to the Earth  
*Untuk mengumpul maklumat dan menghantar imej ke Bumi*
- II. To explore other planets  
*Untuk meneroka planet-planet lain*
- III. To detect natural disasters  
*Untuk mengesan bencana alam*
- A. I and II only  
 B. I and III only  
 C. II and III only  
 D. I, II and III



55/2

Science

Paper 2

August

2011

1 ½ hours



JABATAN PELAJARAN NEGERI PERAK

**PEPERIKSAAN PERCUBAAN  
PENILAIAN MENENGAH RENDAH  
NEGERI PERAK TAHUN 2011**

**SCIENCE**

Paper 2

One Hour Thirty Minutes

**DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO**

1. This question paper consists of two sections:  
**Section A and Section B.**
2. Write your answers in the spaces provided in the question paper.
3. The diagrams in the questions provided are not drawn to scale unless stated.
4. Marks allocated for each question or part question are shown in brackets.
5. The time suggested to complete **Section A** is 60 minutes and **Section B** is 30 minutes.
6. You may use a **non-programmable** scientific calculator.
7. Hand in your entire answer sheet at the end of the examination.

Section	Question	Full marks	Marks
<b>A</b>	1	6	
	2	6	
	3	6	
	4	6	
	5	8	
	6	8	
<b>B</b>	7	8	
	8	12	
<b>Total marks</b>		<b>60</b>	

**This question paper consists of 19 printed pages and 1 unprinted page.**

For  
Examiner's  
Use

**Section A**  
**Bahagian A**

[40 marks]

[40 markah]

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

1. Diagram 1 shows three types of system P, Q and R.  
Rajah 1 menunjukkan tiga jenis sistem P, Q dan R.

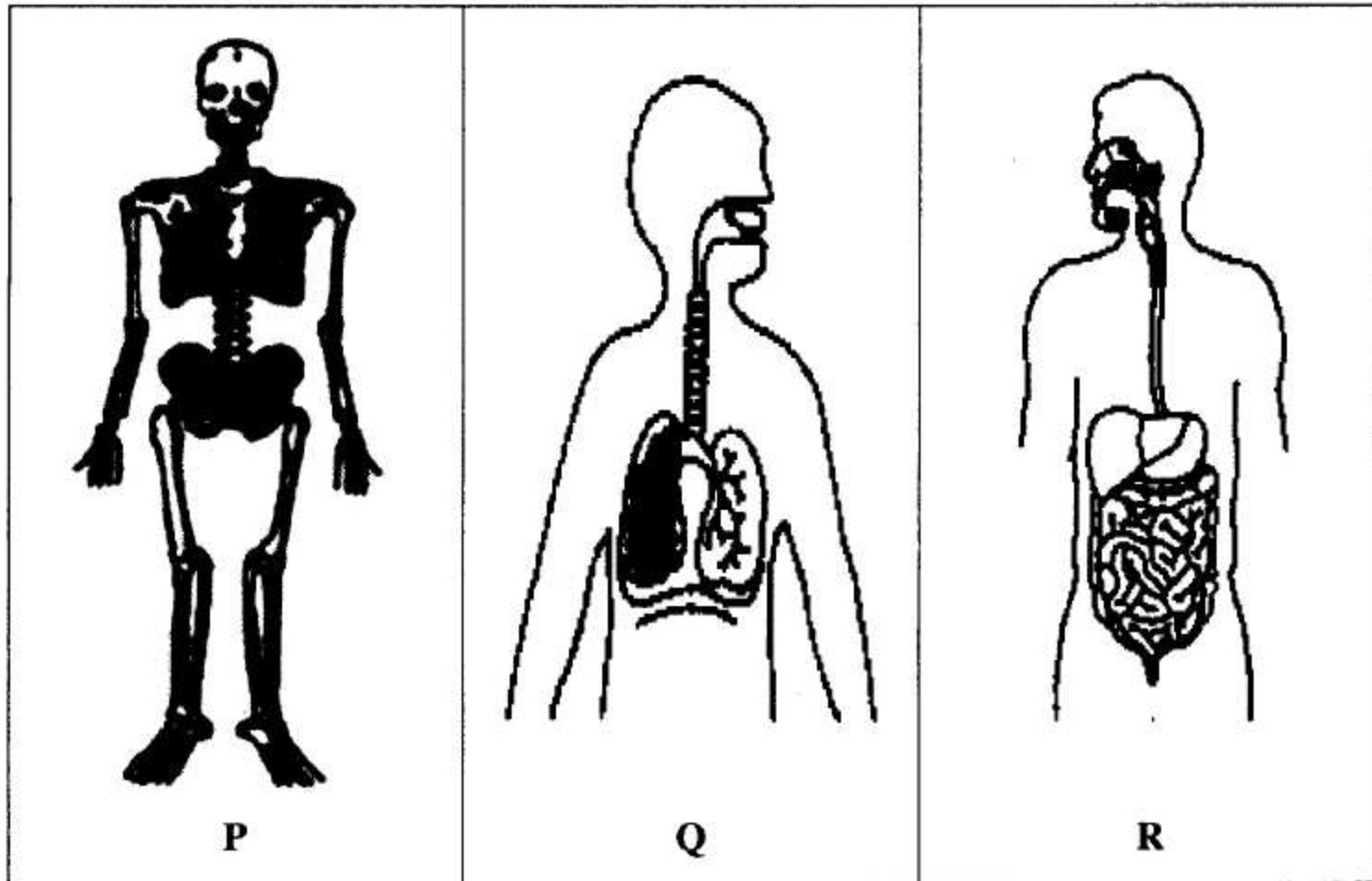


Diagram 1 / Rajah 1

--	--	--

- (a) Name P, Q and R in Diagram 1 by using the words given in the box below.  
Namakan P, Q dan R dalam Rajah 1 menggunakan perkataan dalam petak di bawah.

Digestive system Sistem pencernaan	Skeletal system Sistem rangka	Respiratory system Sistem respirasi
---------------------------------------	----------------------------------	--

[3 marks]  
[3 markah]

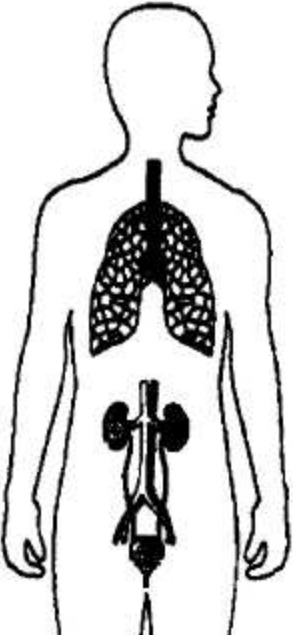




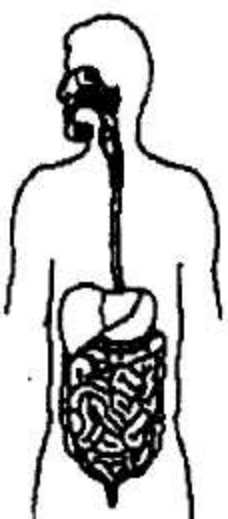

1(a)

	3
--	---



- (b) Draw lines to match the system with its process.  
*Lukis garisan untuk memadankan sistem dengan prosesnya.*

*For  
Examiner's  
Use*

System <i>Sistem</i>	Function <i>Fungsi</i>
	 Produce new offspring <i>Menghasilkan anak</i>
 <i>Female</i>	 Digest and absorb food <i>Mencerna dan menyerap makanan</i>
 <i>Male</i>	
	 Remove waste product. <i>Menyingkirkan bahan kumuh.</i>

1(b)

	3
--	---

Total A1

	6
--	---

For  
Examiner's  
Use

2. Diagram 2.1 shows a plant cell.  
*Rajah 2.1 menunjukkan sel tumbuhan.*

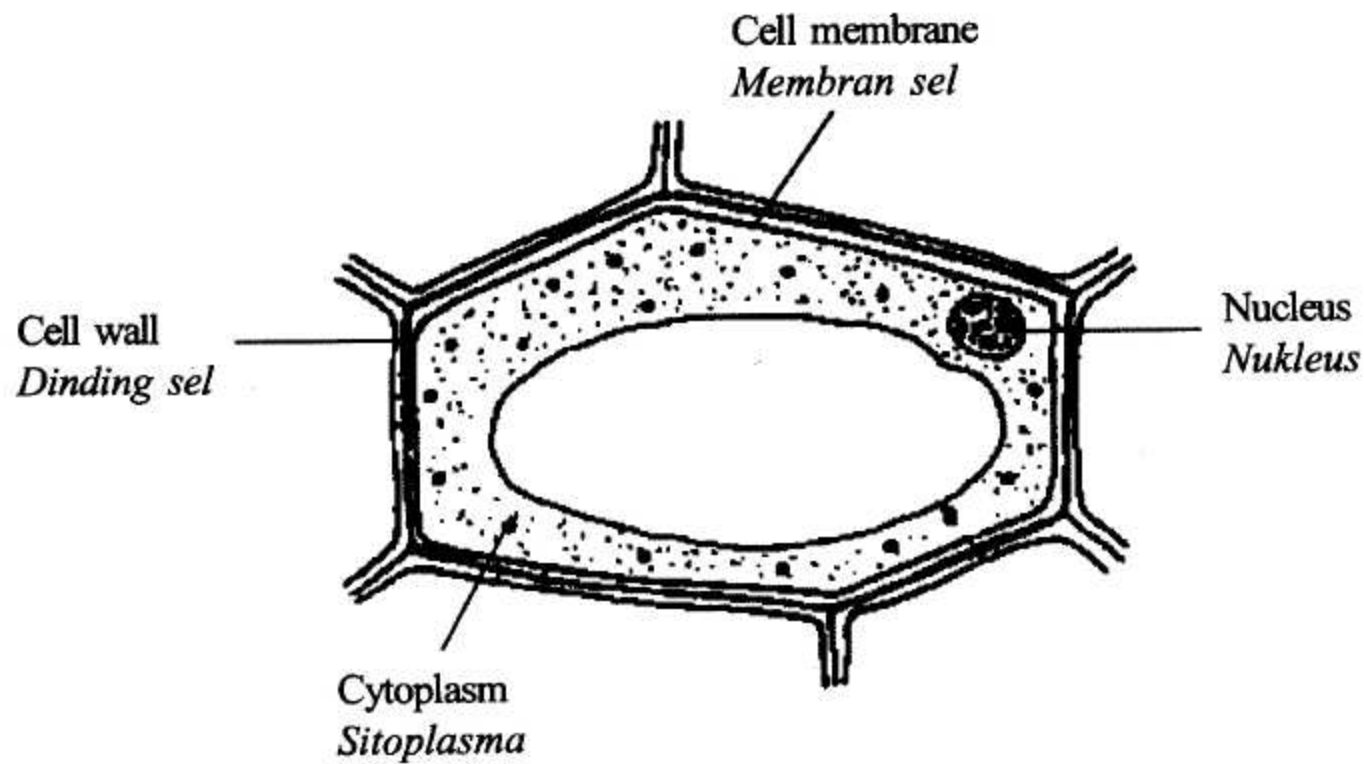


Diagram 2.1 / *Rajah 2.1*

- (a) Name the part of the plant cell that is used for support.  
*Namakan bahagian sel tumbuhan yang memberi sokongan.*

2(a)

1
---

[1 mark]

[1 markah]

- (b) Complete Table 2 by writing the name of plant that use the adapted part for support.  
*Lengkapkan Jadual 2 dengan menulis nama tumbuhan yang menggunakan bahagian yang diadaptasi untuk sokongan.*

Adapted plant parts used for support <i>Bahagian tumbuhan yang diadaptasi untuk sokongan</i>	Name of plants <i>Nama tumbuhan</i>
Thorn <i>Duri</i>	
Tendrils <i>Sulur paut</i>	
Breathing root <i>Akar pernafasan</i>	

2(b)

2
---

Table 2 / *Jadual 2*

[2 marks]

[2 markah]

Lihat Sebelah  
SULIT



- (c) Diagram 2.2 shows a cross section of a plant stem.  
*Rajah 2.2 menunjukkan keratan rentas batang tumbuhan.*

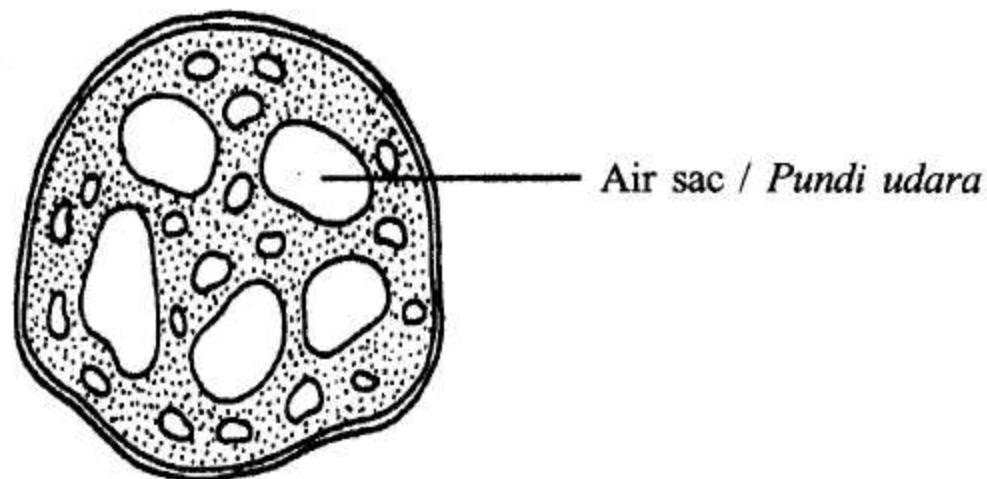


Diagram 2.2 / Rajah 2.2

- (i) State one function of air sac.  
*Nyatakan satu fungsi pundi udara.*

[1 mark]  
 [1 markah]

2(c)(i)

1
---

- (ii) Name a plant that has this structure.  
*Namakan sejenis tumbuhan yang mempunyai struktur ini.*

[1 mark]  
 [1 markah]

2(c)(ii)

1
---

- (iii) What is the habitat of this plant?  
*Apakah habitat bagi tumbuhan ini?*

[1 mark]  
 [1 markah]

2(c)(iii)

1
---

Total A2

6
---

For  
 Examiner's  
 Use

For  
Examiner's  
Use

3. Diagram 3 shows the graph of the solubility of two salts, X and Y.  
Rajah 3 menunjukkan graf keterlarutan dua garam X dan Y.

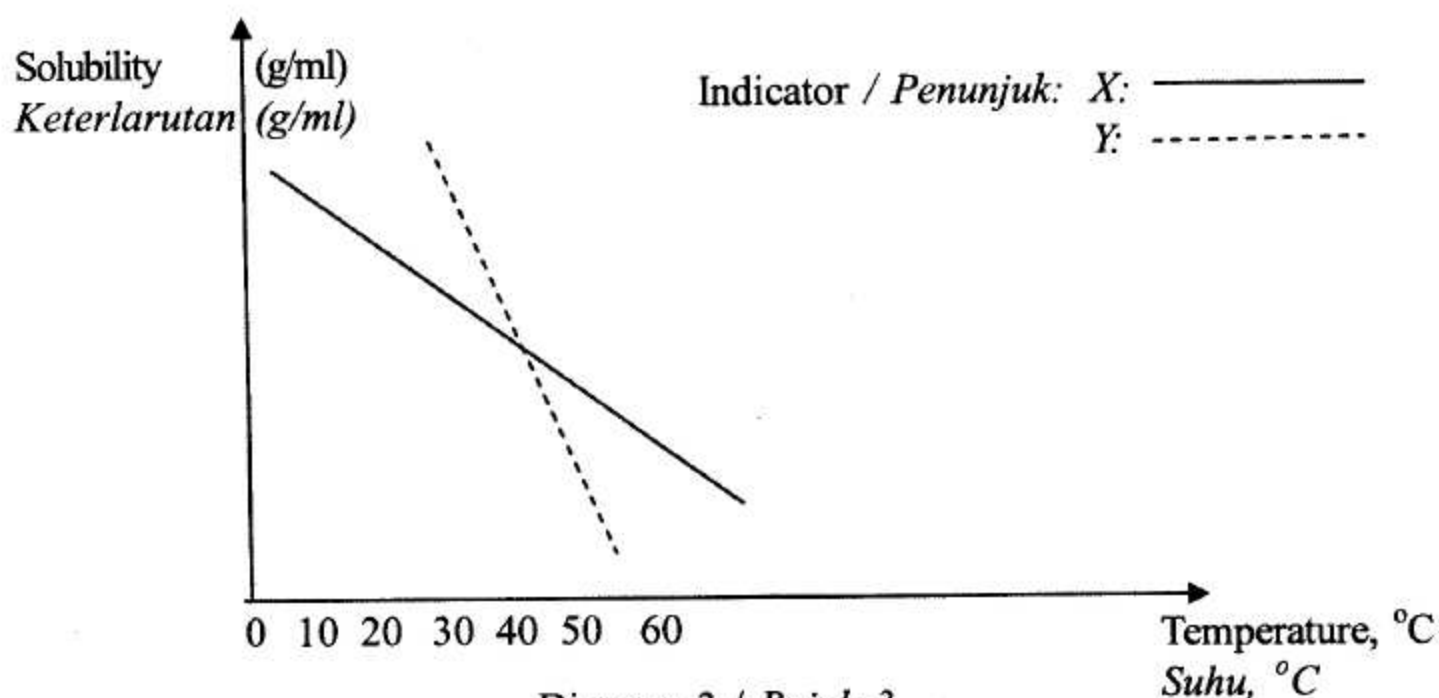


Diagram 3 / Rajah 3

- (a) Based on the graph in Diagram 3,  
Berdasarkan graf dalam Rajah 3,

- (i) State the factor that affects the solubility of salt X and Y.  
Nyatakan faktor yang mempengaruhi keterlarutan garam X dan Y.

3(a)(i)

1
---

[1 mark]

[1 markah]

- (ii) Which salt has a higher solubility?  
Garam manakah yang mempunyai keterlarutan yang lebih tinggi?

3(a)(ii)

1
---

[1 mark]

[1 markah]

- (iii) State the temperature where the solubility of salt X and Y are the same.  
Nyatakan suhu di mana keterlarutan garam X dan Y adalah sama.

3(a)(iii)

1
---

[1 mark]

[1 markah]

- (b) Suggest one way to increase the solubility of salt X and Y.  
Cadangkan satu cara untuk meningkatkan keterlarutan garam X dan Y.

3(b)

1
---

[1 mark]

[1 markah]



For  
Examiner's  
Use

- (c) Ali helps his father to paint their house. He accidentally split the paint on his shirt.  
*Ali menolong bapanya mengecat rumah. Secara tidak sengaja bajunya terkena cat.*

- (i) How can the paint be removed?  
*Bagaimanakah cat itu boleh ditanggalkan?*

[1 mark]

[1 markah]

3(c)(i)

1
---

- (ii) Give a reason for the answer in (b)(i).  
*Beri satu sebab bagi jawapan anda di (b)(i).*

[1 mark]

[1 markah]

3(c)(ii)

1
---

Total A3

6
---

4. Diagram 4.1 shows the human urinary system.  
*Rajah 4.1 menunjukkan sistem urinari manusia*

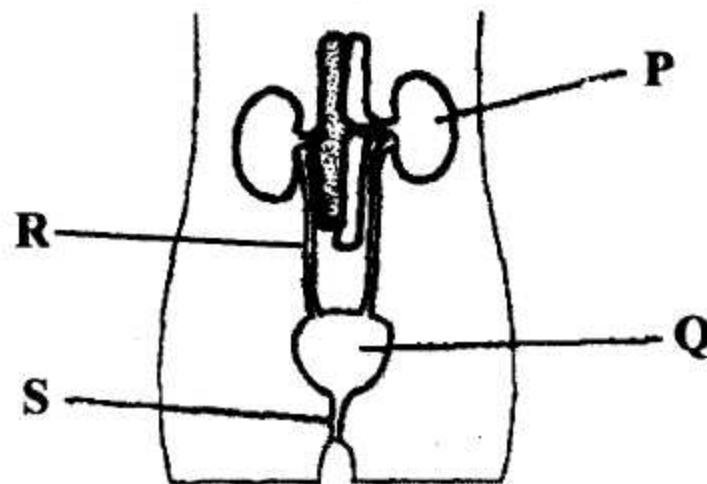


Diagram 4.1 / Rajah 4.1

- (a) Using the letters in Diagram 4.1, complete the flow chart below to show the pathway of urine before it is eliminated from the human body.  
*Dengan menggunakan huruf-huruf dalam Rajah 4.1, lengkapkan carta alir di bawah bagi menunjukkan laluan urin sebelum disingkirkan dari badan.*



[2 marks]

[2 markah]

4(a)

2
---

For  
Examiner's  
Use

- (b) Diagram 4.2 shows a machine used to treat a patient with an organ failure.  
*Rajah 4.2 menunjukkan sebuah mesin yang digunakan untuk rawatan kegagalan organ tertentu.*

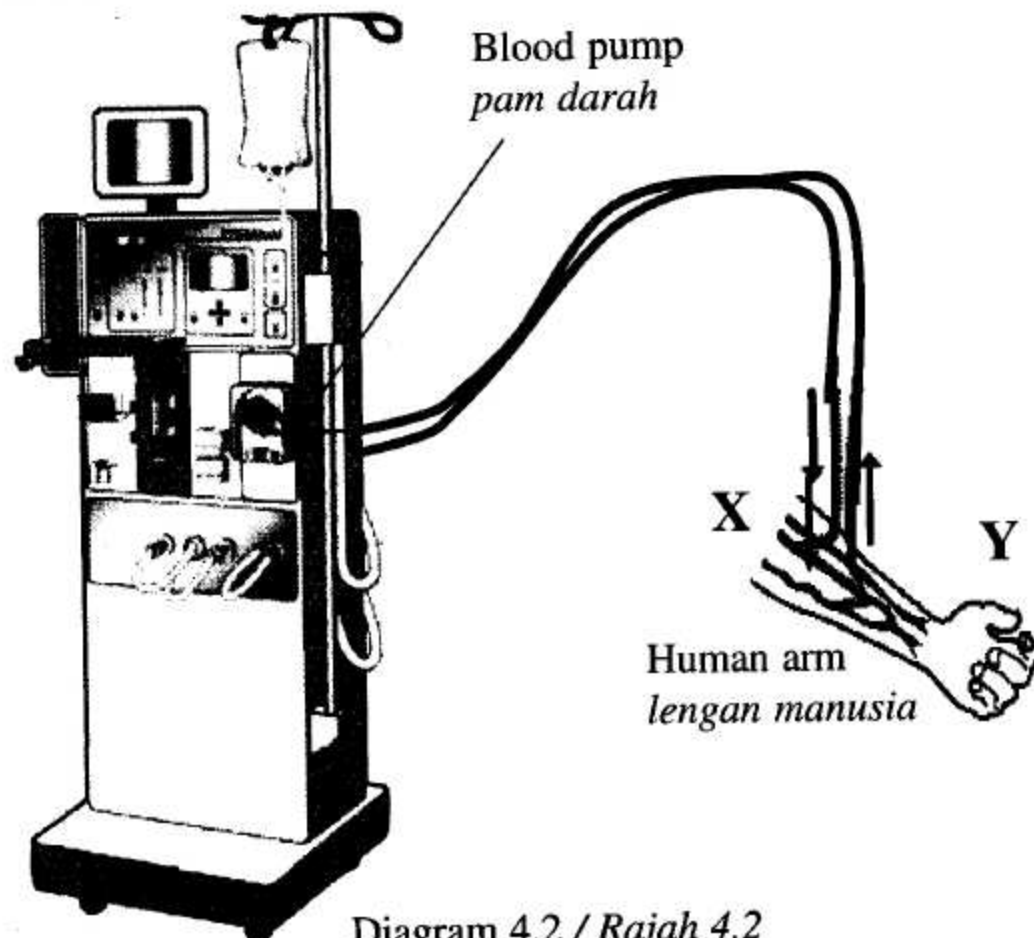


Diagram 4.2 / Rajah 4.2

- (i) Name the organ which needs this machine.  
*Namakan organ yang memerlukan mesin ini.*
- .....
- [1 mark]  
[1 markah]

- (ii) The patient in (b)(i) undergoes treatment with this machine.  
State one difference between the blood content in tube X and tube Y.  
*Pesakit dalam (b)(i) menjalani rawatan dengan menggunakan mesin ini.  
Nyatakan satu perbezaan di antara kandungan darah dalam tiub X dan tiub Y.*
- .....
- [1 mark]  
[1 markah]

- (c) A student's urine is tested in a laboratory using Benedict's Test. Brick red precipitate is formed. Explain.  
*Urin seorang pelajar telah diuji dalam makmal dengan menggunakan Ujian Benedict. Didapati mendakan merah bata terhasil. Terangkan.*
- .....
- .....

[2 marks]  
[2 markah]

Lihat Sebelah  
SULIT

4(b)(i)

1
---

4(b)(ii)

1
---

4(c)

2
---

Total A4

6
---

55/2



5. Diagram 5.1 shows two bars magnet placed side by side.  
*Rajah 5.1 menunjukkan dua magnet bar yang diletakkan bersebelahan antara satu sama lain.*



Diagram 5.1 / Rajah 5.1

- (a) A piece of white paper is placed on the two magnets and some iron fillings are sprinkled on it.

*Sehelai kertas putih diletakkan di atas magnet-magnet ini dan serbuk besi ditaburkan di atasnya.*

- (i) Sketch the pattern formed by the iron fillings on Diagram 5.1.  
*Lukiskan corak yang terbentuk apabila serbuk besi ditaburkan di atas kertas putih pada Rajah 5.1*

[1 mark]

[1 markah]

- (ii) Mark (X) where there are no magnetic field lines on Diagram 5.1.  
*Tandakan (X) di mana tidak terdapat garis medan magnet dalam Rajah 5.1.*

[1 mark]

[1 markah]

- (b) State one other way to detect magnetic field lines.  
*Nyatakan satu cara lain untuk mengesan garis medan magnet.*

.....

[1 mark]

[1 markah]

- (c) Diagram 5.2 shows the magnetic field around the wire carrying an electric current.  
*Rajah 5.2 menunjukkan medan magnet di sekeliling wayar yang sedang mengalirkan arus elektrik.*

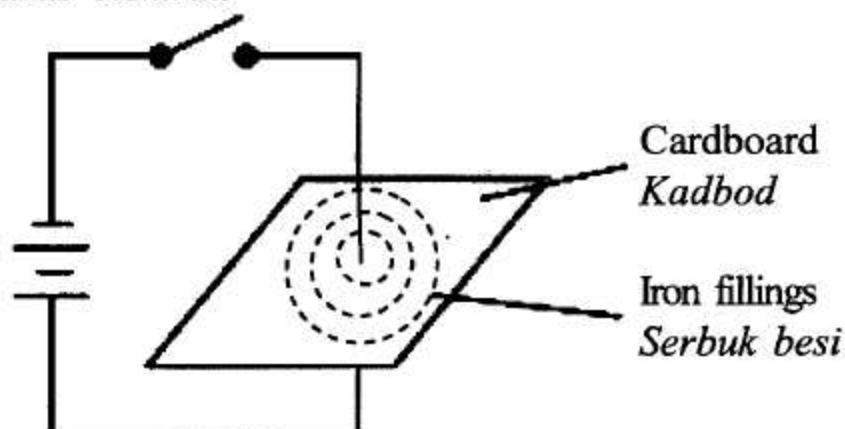


Diagram 5.2 / Rajah 5.2

- (i) Draw arrow on the magnetic field lines to show the direction of the magnetic field.

*Lukiskan anak panah di atas garis medan magnet untuk menunjukkan arah medan magnet.*

[1 mark]

[1 markah]

5(a)(i)

1
---

5(a)(ii)

1
---

5(b)

1
---

5(c)(i)

1
---

For  
Examiner's  
Use

5(c)(ii)

	1
--	---

- (ii) What rule is used to determine the direction of the magnetic field?  
*Apakah hukum yang digunakan untuk menentukan arah medan magnet?*

[1 mark]

[1 markah]

- (d) Diagram 5.3 shows two magnetic fields around a wire carrying an electric current.  
*Rajah 5.3 menunjukkan dua medan magnet mengelilingi wayar yang sedang mengalirkan arus elektrik.*

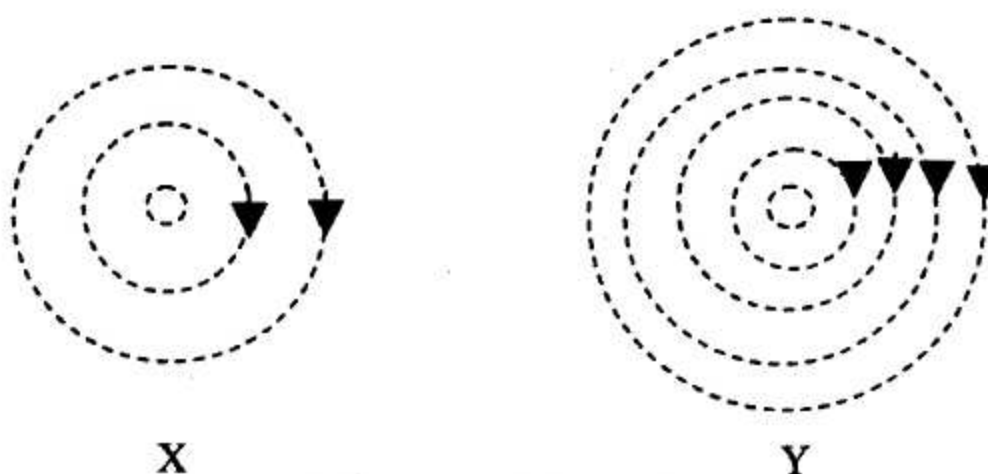


Diagram 5.3 / Rajah 5.3

- (i) State **one** difference between magnetic field X and Y.  
*Nyatakan **satu** perbezaan di antara medan magnet X dan Y.*

[1 mark]

[1 markah]

- (ii) How can the magnetic field in Y be produced?  
*Bagaimanakah medan magnet Y boleh dihasilkan?*

[1 mark]

[1 markah]

- (iii) How can the direction of magnetic field be changed?  
*Bagaimanakah arah medan magnet boleh diubah?*

[1 mark]

[1 markah]

5(d)(i)

	1
--	---

5(d)(ii)

	1
--	---

5(d)(iii)

	1
--	---

Total A5

	8
--	---



For  
Examiner's  
Use

6. Diagram 6 shows two animals P and Q with different types of vision.  
Rajah 6 menunjukkan dua haiwan P dan Q dengan jenis penglihatan yang berbeza.



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

Diagram 6.1 / Rajah 6.1

- (a) Name type of vision P and Q in the space provided in Diagram 6.1.  
Namakan jenis penglihatan P dan Q pada ruangan yang disediakan dalam Rajah 6.1.

[2 marks]  
[2 markah]

6(a)

2
---

- (b) Diagram 6.2 shows an animal.  
Rajah 6.2 menunjukkan seekor haiwan.



Diagram 6.2 / Rajah 6.2.

Draw the visual field for the animal in Diagram 6.2.  
Lukis medan penglihatan haiwan tersebut pada Rajah 6.2.

[2 marks]  
[2 markah]

6(b)

2
---

- (c) Based on vision P and Q state one advantage of each vision.  
Nyatakan satu kelebihan setiap satu jenis penglihatan P dan Q.

P: .....

Q: .....

[2 marks]  
[2 markah]

6(c)

2
---

- (d) How these visions help the animals to survive in their habitats?  
Bagaimanakah penglihatan ini membantu haiwan menyesuaikan diri dalam habitatnya?

P: .....

Q: .....

[2 marks]  
[2 markah]

6(d)

2
---

Total A6

8
---

For  
Examiner's  
Use

Section B  
Bahagian B

[20 marks]

[20 markah]

Answer all questions  
Jawab semua soalan

7. Diagram 7 shows the apparatus set up to study the properties of metal and non-metal.  
*Rajah 7 menunjukkan susunan radas untuk mengkaji sifat logam dan bukan logam.*

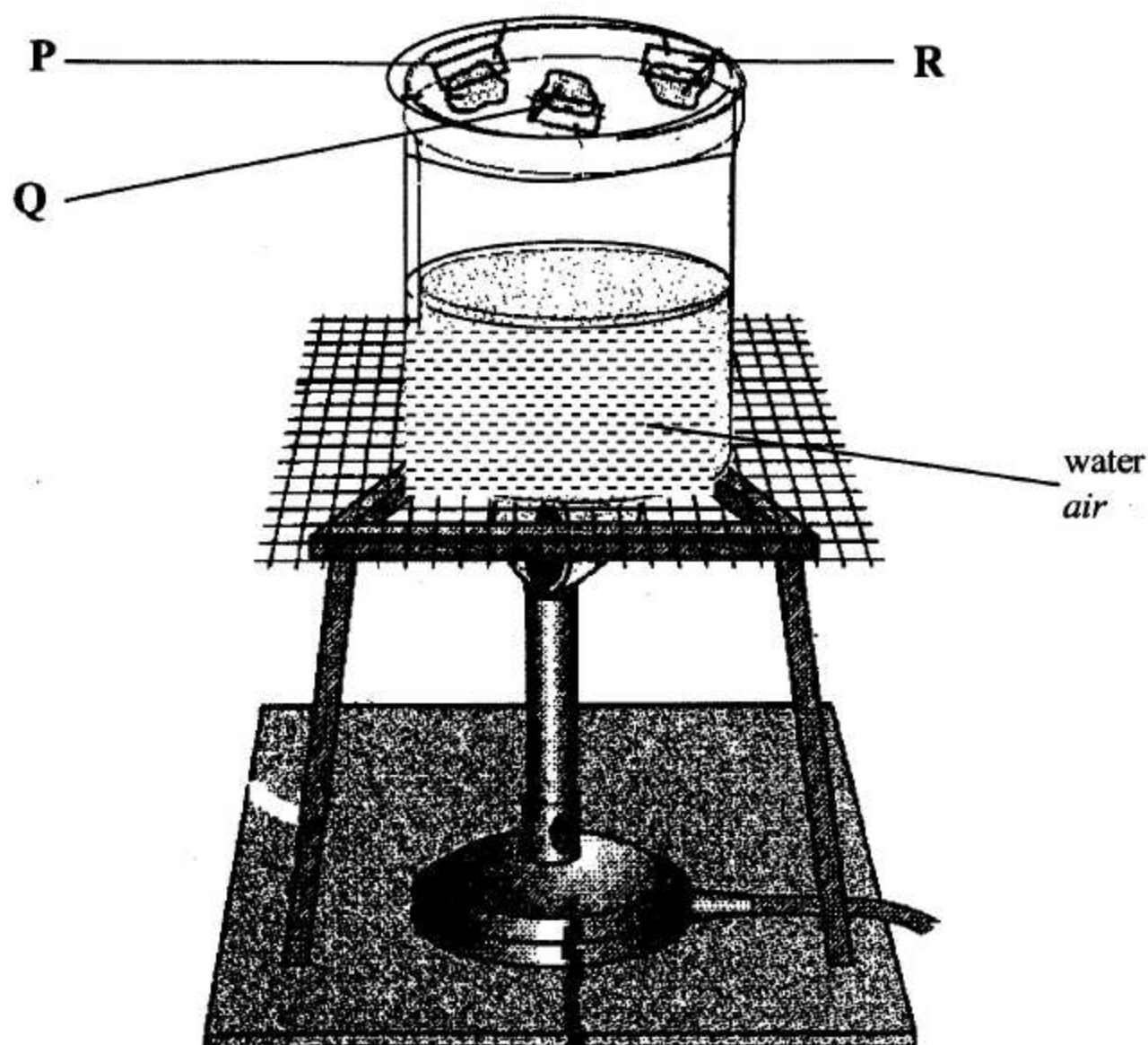


Diagram 7 / Rajah 7

A petri dish is placed over the beaker containing hot water. Substances P, Q and R are placed into the petri dish. Pink moist cobalt chloride papers are placed over each substance as shown in Diagram 7. The times taken for pink moist cobalt chloride paper to change are shown by the reading of stopwatch.

*Satu piring petri diletakkan diatas bikar yang mengandungi air panas. Bahan P, Q dan R diletakkan dalam piring petri. Kertas kobalt klorida lembap dilekatkan di atas setiap bahan seperti yang ditunjukkan dalam Rajah 7. Masa yang diambil untuk kertas kobalt klorida berubah warna ditunjukkan oleh bacaan jam randik.*



Moist cobalt chloride paper changes from pink to blue when heated.  
*Kertas kobalt klorida lembap berubah warna dari merah jambu ke biru bila dipanaskan*

For  
Examiner's  
Use

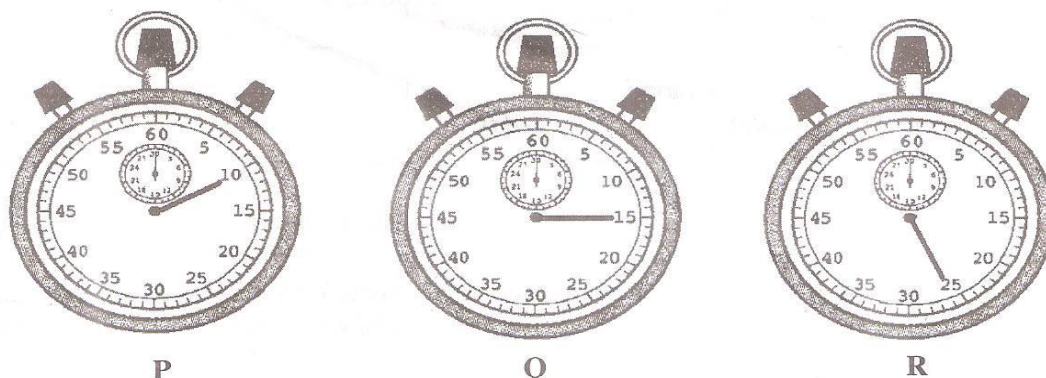


Diagram 7.1 / Rajah 7.1

- (a) (i) Based on the observation in Diagram 7.1, record the reading of stopwatch of P and R into Table 7.1.  
*Berdasarkan pemerhatian pada Rajah 7, rekodkan bacaan jam randik bagi P dan R dalam Jadual 7.1*

Substances <i>Bahan</i>	Reading of stopwatch /s <i>Bacaan jam randik / s</i>
P	
Q	15
R	

Table 7.1 / Jadual 7.1

[2 marks]  
[2 markah]

7(a)(i)

2
---

- (ii) Compare the heat conductivity of P and R.  
*Bandingkan kekonduksian haba bagi P dan R.*

[1 mark]  
[1 markah]

7(a)(ii)

1
---

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

[1 mark]  
[1 markah]

7(a)(iii)

1
---

E For  
Examiner's  
Use

- (iv) State the variables involved in the experiment.  
*Nyatakan pembolehubah yang terlibat dalam eksperimen tersebut.*

Constant variable <i>Pembolehubah dimalarkan</i>	
Responding variable <i>Pembolehubah bergerakbalas</i>	

[2 marks]

[2 markah]

- (b) Table 7.2 shows the result of electrical conductivity between aluminium and sulphur.  
*Jadual 7.2 menunjukkan keputusan kekonduksian elektrik antara aluminium dan sulfur.*

Substances <i>Bahan</i>	Reading of stopwatch / s <i>Bacaan jam randik / s</i>	Ammeter reading / A <i>Bacaan Ammeter / A</i>
Aluminium <i>Aluminium</i>	8	3.0
Sulphur <i>Sulfur</i>	33	0

Table 7.2 / *Jadual 7.2*

- (i) Based on the result in table 7.2 state one inference about the electrical conductivity of aluminium and sulphur.  
*Berdasarkan keputusan dalam Jadual 7.2, nyatakan satu inferens tentang kekonduksian elektrik bagi aluminium dan sulfur.*

[1 mark]

[1 markah]

- (ii) Predict the ammeter reading if copper is used.  
*Ramalkan bacaan ammeter jika kuprum digunakan.*

[1 mark]

[1 markah]

7(a)(iv)

2
---

7(b)(i)

1
---

7(b)(ii)

1
---

Total B7

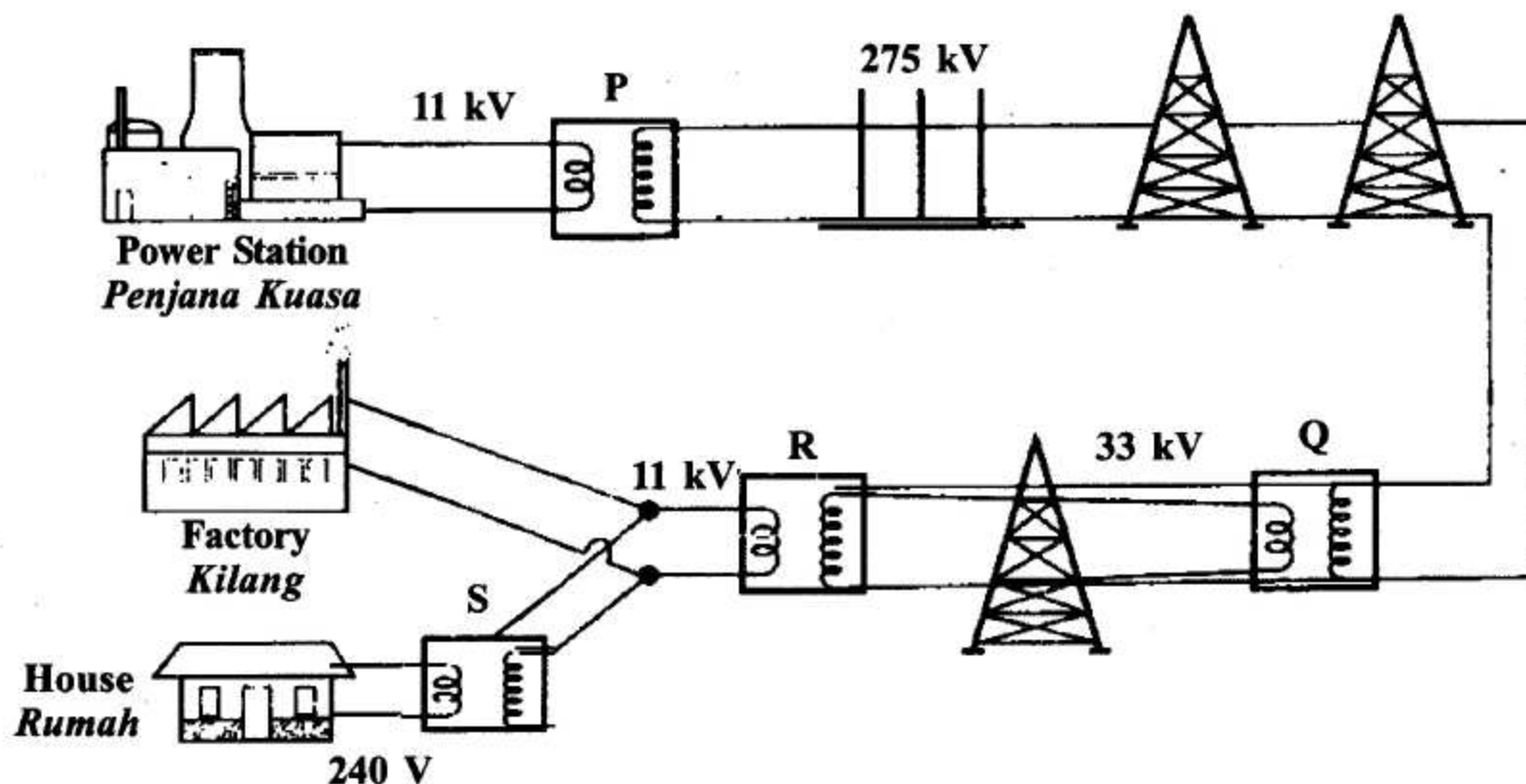
8
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8. Diagram 8.1 shows an electrical energy transmission and distribution system. P, Q, R and S are transformers that adjust the voltage value in the system.

*Rajah 8.1 menunjukkan sistem penghantaran dan pengagihan tenaga elektrik. P, Q, R dan S adalah transformer yang menyelaraskan nilai voltan dalam sistem tersebut.*

*For  
Examiner's  
Use*



- (a) Classify transformers P, Q, R and S based on their type  
*Kelaskan transformer P, Q, R dan S berdasarkan jenis transformer*

Step-up transformer <i>Transformer injak-naik</i>	Step-down transformer <i>Transformer injak-turun</i>

[2 marks]  
[2 markah]

8(a)

2
---

For  
Examiner's  
Use

Diagram 8.2 shows a transformer.

Rajah 8.2 menunjukkan sebuah transformer.

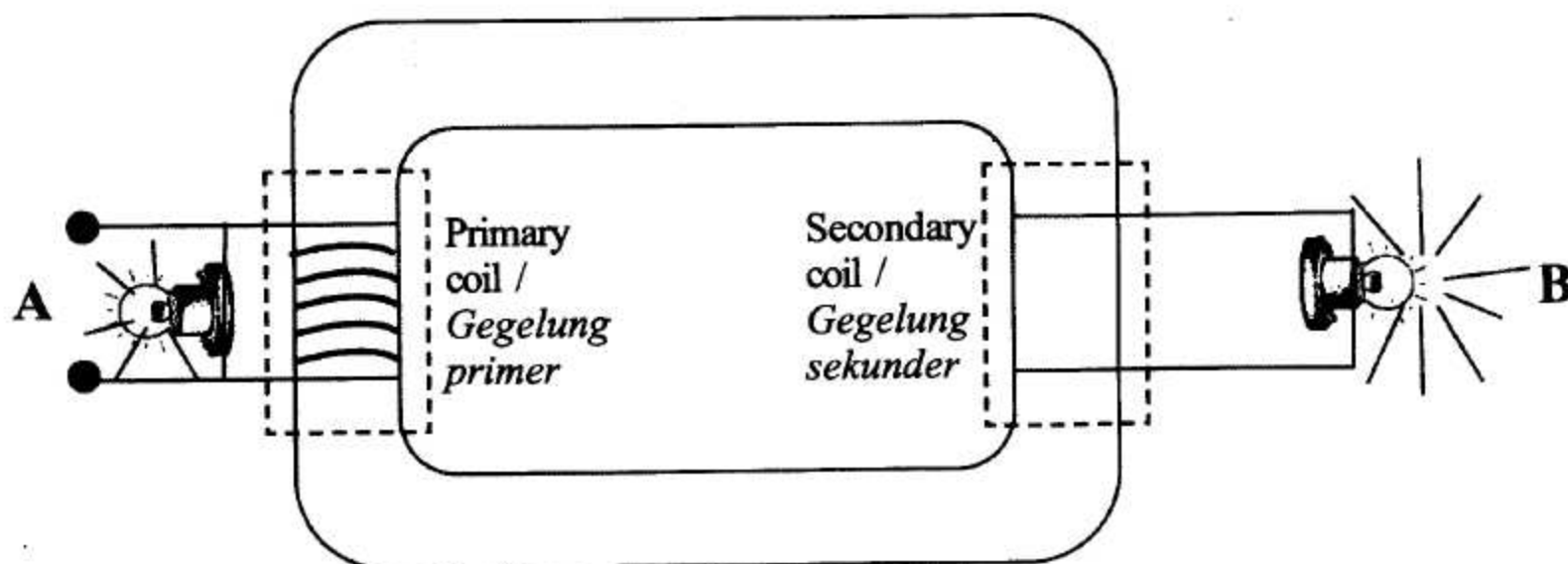


Diagram 8.2 / Rajah 8.2

- (b) (i) Compare the difference of the brightness of Bulb A and B

.....

.....

[1 mark]

[1 markah]

- (ii) Based on the brightness of the bulb draw the secondary coils in Diagram 8.2  
Berdasarkan kecerahan mentol lukiskan gegelung sekunder dalam Rajah 8.2

.....

.....

[1 mark]

[1 markah]

- (iii) Write one inference about the brightness of bulb B.  
Tuliskan satu inferens mengenai kecerahan mentol B.

.....

.....

[1 mark]

[1 markah]

8(b)(i)

1
---

8(b)(ii)

1
---

8(b)(iii)

1
---



Diagram 8.3 shows a set up to investigate the function of a step-up transformer.  
*Rajah 8.3 menunjukkan radas yang disediakan untuk mengkaji fungsi sebuah transformer injak-naik.*

For  
Examiner's  
Use

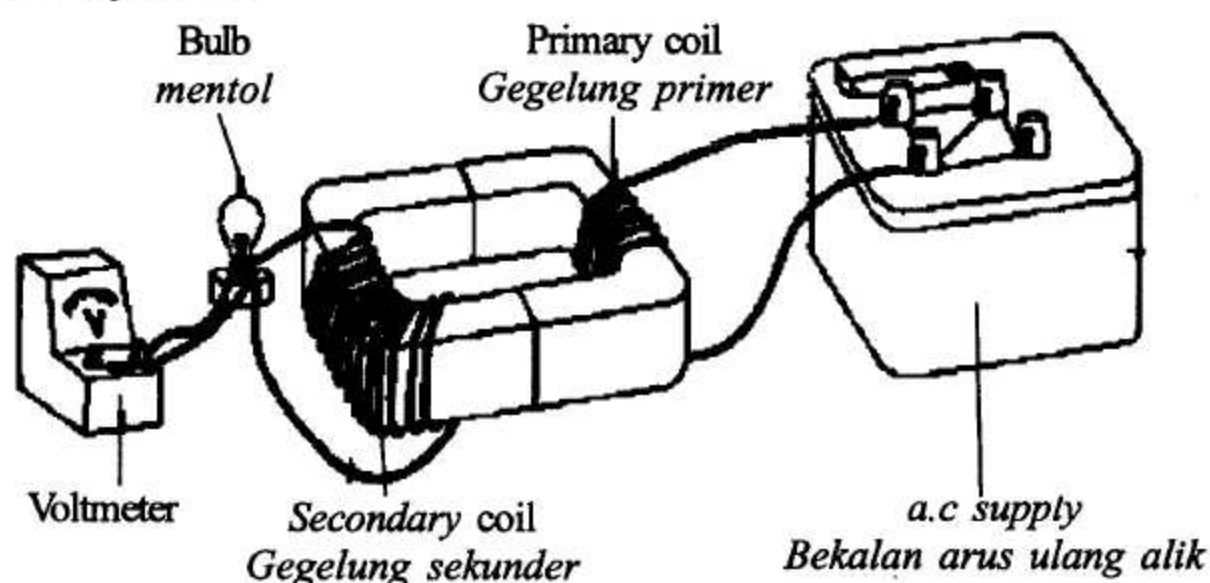


Diagram 8.3 / Rajah 8.3

- (c) Diagram 8.4, shows the reading of the voltmeter when 20 turns of secondary coil is used. Complete Table 8.1.

*Rajah 8.4, menunjukkan bacaan bagi voltmeter apabila 20 lilitan gegelung sekunder digunakan. Lengkapkan Jadual 8.1*

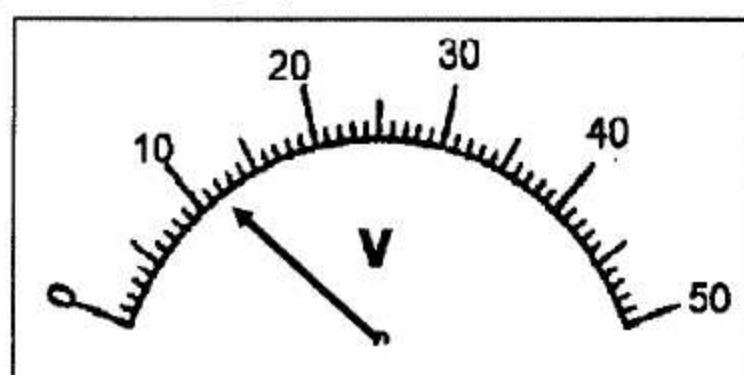


Diagram 8.4 / Rajah 8.4

Table 8.1 shows the reading of transformers with 3 different number of turns of wire in the secondary coil.

*Jadual 8.1 menunjukkan bacaan pada transformer dengan tiga bilangan lilitan wayar yang berbeza.*

Number of turns / Bilangan lilitan		Voltage / Voltan	
Primary coil / Gegelung primer	Secondary coil / Gegelung sekunder	Input Voltage / Voltan input	Output voltage / Voltan output
10	20	8	
10	30	8	18
10	40	8	24
10	50	8	30

Table 8.1 / Jadual 8.1

[1 mark]

[1 markah]

Lihat sebelah

SULIT



For  
Examiner's  
Use

- (d) State the variable involve in this activity.  
*Nyatakan pembolehubah yang terlibat dalam aktiviti ini.*

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

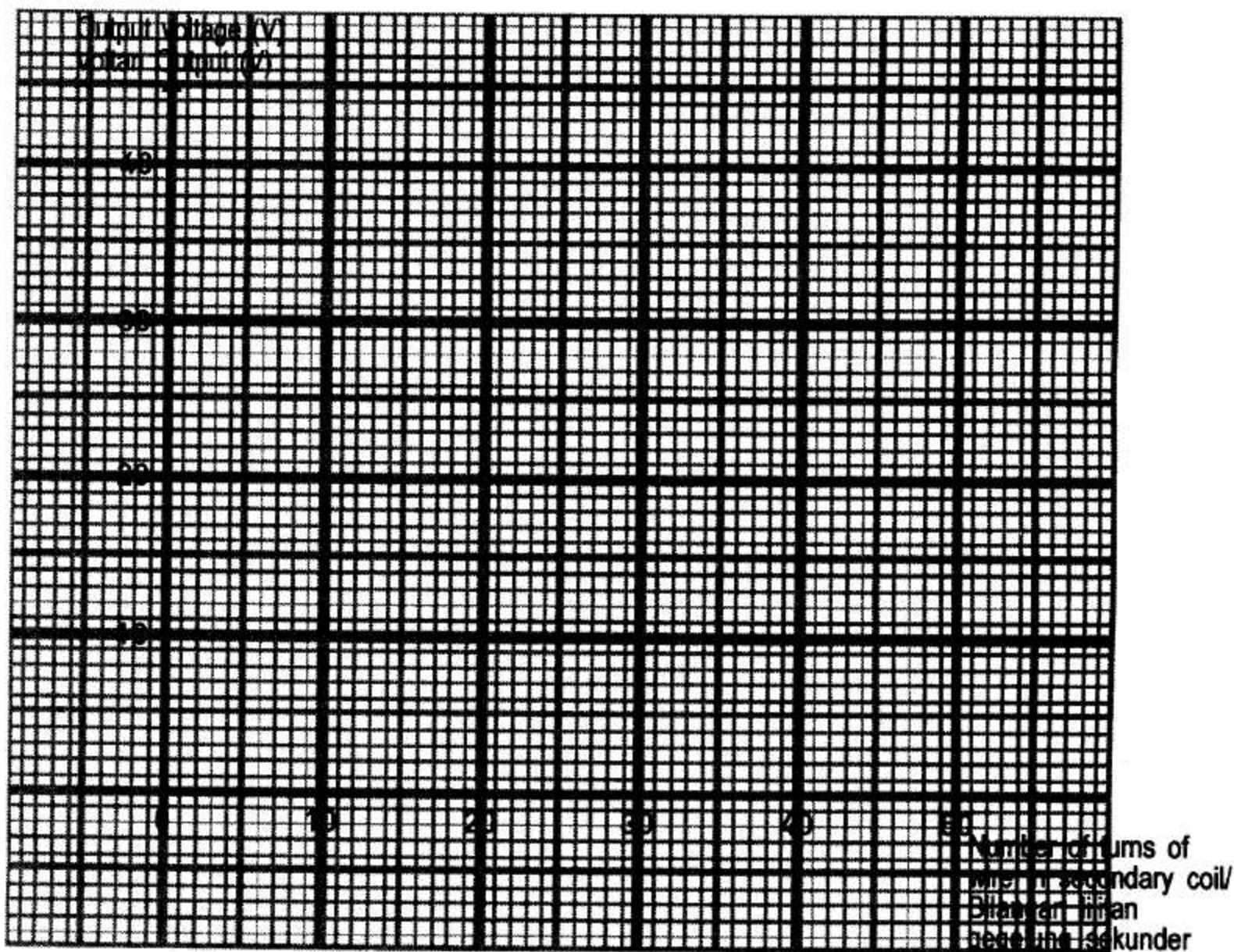
[2 marks]

[2 markah]

8(d)

2
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- (e) (i) Based on the data in Table 8.1, draw a line graph of the output voltage against the number of turns of secondary coil  
*Berdasarkan data dalam Jadual 8.1, lukiskan graf garis voltan output melawan bilangan lilitan gegelung sekunder*



[2 marks]

[2 markah]

8(e)(i)

2
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- (ii) Based on the line graph drawn in 8(e)(i), state one relationship between the number of turns of wire in secondary coil and the output voltage.

*Berdasarkan graf garis yang dilukis di 8(e)(i), nyatakan satu hubungan di antara bilangan lilitan gegelung sekunder dengan voltan output.*

.....

.....

[1 mark]  
[1 markah]

For  
Examiner's  
Use

8(e)(ii)

1
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- (f) State the operational definition of output voltage.  
*Nyatakan definisi secara operasi bagi voltan output.*

.....

[1 mark]  
[1 markah]

8(f)

1
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Total B8

12
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**END OF QUESTION PAPER**  
**KERTAS SOALAN TAMAT**