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Science  
Paper 1  
August  
2010  
1 hour



**ANJURAN  
PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA  
SEKOLAH MENENGAH MALAYSIA  
CAWANGAN PERLIS**

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**PEPERIKSAAN PERCUBAAN BERSAMA  
PENILAIAN MENENGAH RENDAH (PMR)  
TAHUN 2010**

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**SAINS**

**Kertas 1**

**Satu jam**

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**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

1. *Kertas soalan ini adalah dalam dwibahasa.*
2. *Soalan dalam Bahasa Inggeris mendahului soalan yang sepadan dalam Bahasa Melayu.*
3. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

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**Kertas soalan ini mengandungi 25 halaman bercetak.**

- 1 Diagram 1 shows a measuring tools.  
Rajah 1 menunjukkan satu alat penyukat.

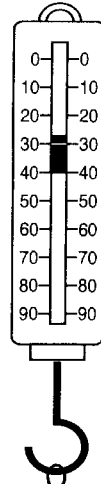
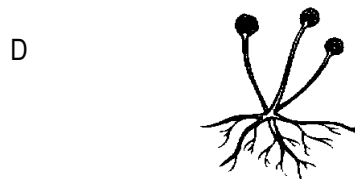
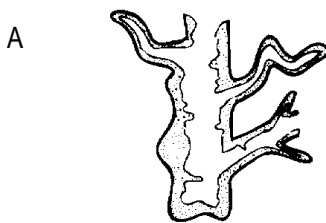


Diagram 1  
Rajah 1

This tools is used to  
Alat ini digunakan untuk

- A measure the mass of an object.  
*menyukat jisim sesuatu objek.*
- B measure the weight of an object.  
*menyukat berat sesuatu objek.*
- C measure the area of an object.  
*menyukat luas sesuatu objek.*
- D measure the length of an object  
*menyukat panjang sesuatu objek.*
- 2 Which of the following is a unicellular organism?  
Manakah antara berikut merupakan organisma unisel?



- 3 Diagram 2 shows a process to separate a substance from its mixture.  
*Rajah 2 menunjukkan satu proses untuk memisahkan suatu bahan daripada campurannya.*

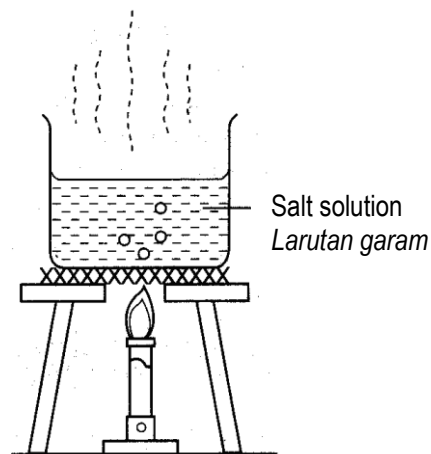


Diagram2  
*Rajah 2*

Name the process.  
*Namakan proses itu.*

- A Filtration  
*Penurasan*
- B Evaporation  
*Sejatan*
- C Distillation  
*Penyulingan*
- D Condensation  
*kondensasi*
- 4 The information below shows examples of renewable sources of energy.  
*Maklumat di bawah menunjukkan contoh-contoh sumber tenaga yang boleh diperbaharui.*

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

What is the name of this types of energy source?  
*Apakah nama sumber tenaga ini?*

- A Biomass  
*Biojisim*
- B Coal  
*Arang batu*
- C Petroleum  
*Petroleum*

D Geothermal  
Geoterma

- 5 Diagram 3 shows the conditions needed for combustion.  
Rajah 3 menunjukkan keadaan yang diperlukan untuk pembakaran.

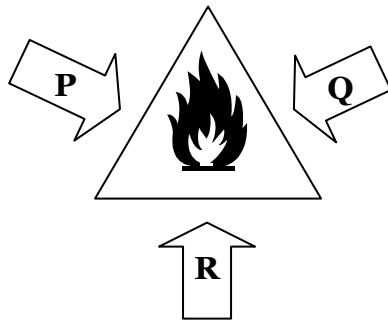


Diagram 3  
Rajah 3

What do **P**, **Q** and **R** represent?  
Apakah yang diwakili oleh **P**, **Q** dan **R**?

	<b>P</b>	<b>Q</b>	<b>R</b>
A	Light Cahaya	Fuel Bahan api	Oxygen Oksigen
B	Fuel Bahan api	Oxygen Oksigen	Heat Haba
C	Oxygen Oksigen	Carbon Karbon	Fuel Bahan api
D	Carbon dioxide Karbon dioksida	Heat Haba	Coal Arang batu

- 6 Diagram 4 shows a set of apparatus in an experiment.  
Rajah 4 menunjukkan satu set alat radas dalam suatu eksperimen.

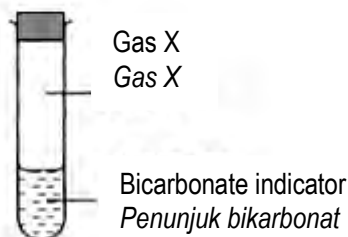


Diagram 4  
Rajah 4

Bicarbonate indicator changes from red to yellow when it reacts with gas **X**. What is gas **X**?  
Penunjuk bikarbonat bertukar daripada warna merah ke kuning apabila bertindak balas dengan gas **X**.  
Apakah gas **X**?

- A Oxygen  
Oksigen  
B Sulphur  
Sulfur  
C Hydrogen  
Hidrogen  
D Carbon dioxide  
Karbon dioksida

- 7 Which of the following pairs is correctly matched?  
 Manakah antara berikut merupakan padanan yang betul?

	Sources <i>Sumber-sumber</i>	Forms of energy <i>Bentuk tenaga</i>
A	An iron <i>Seterika</i>	Light <i>Cahaya</i>
B	A candle <i>Lilin</i>	Mechanical <i>Mekanikal</i>
C	Radio <i>Radio</i>	Potential <i>Keupayaan</i>
D	Dry cells <i>Sel kering</i>	Chemical <i>Kimia</i>

- 8 Diagram 5 shows movement of water particles in a beaker when it is heated.  
 Rajah 5 menunjukkan pergerakan zarah-zarah air dalam bikar apabila dipanaskan.

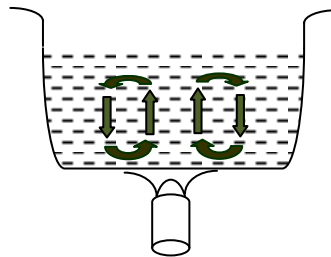


Diagram 5  
 Rajah 5

- Which of the following correctly describes the movement?  
 Manakah antara berikut benar tentang pergerakan tersebut?

- A Conduction  
*Konduksi*
- B Radiation  
*Sinaran*
- C Convection  
*Perolakan*
- D Reflection  
*Pantulan*
- 9 Houses in tropical countries are usually painted white to  
 Kebanyakan rumah di negara tropika dicatkan warna putih bertujuan
- A absorb heat  
*menyerap haba*
- B radiate heat  
*memancarkan haba*
- C detect heat  
*mengesan haba*
- D reflect heat  
*memantulkan haba*

- 10 Diagram 6 show two properties of light.  
Rajah 6 menunjukkan 2 sifat cahaya.

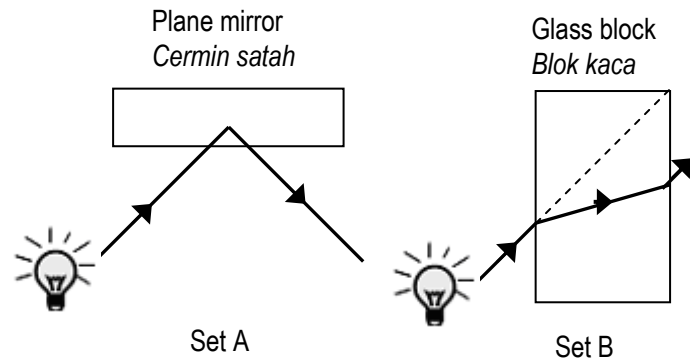


Diagram 6  
Rajah 6

Which of the following properties of light in diagram 6 are correct ?  
Sifat cahaya yang manakah dalam rajah 6 yang betul?

- |   | <b>Set A</b>                   | <b>Set B</b>                   |
|---|--------------------------------|--------------------------------|
| A | Refraction<br><i>Pembiasan</i> | Reflection<br><i>Pantulan</i>  |
| B | Reflection<br><i>Pantulan</i>  | Dispersion<br><i>Sebaran</i>   |
| C | Dispersion<br><i>Sebaran</i>   | Refraction<br><i>Pembiasan</i> |
| D | Reflection<br><i>Pantulan</i>  | Refraction<br><i>Pembiasan</i> |

- 11 Diagram 7 shows a plant that was left for two weeks during an experiment.  
*Rajah 7 menunjukkan eksperimen ke atas pokok yang ditinggalkan selama dua minggu.*

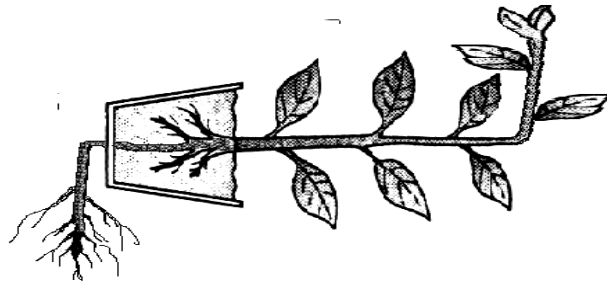


Diagram 7  
 Rajah 7

**Choose the** correct answer in the statements below to state the stimuli that causes this type of response in the root and the shoot of the plant .

**Pilih** jawapan yang tepat mengenai rangsangan yang menghasilkan jenis gerakbalas pada bahagian akar dan pucuk pokok .

	<b>Shoot</b> <b>Pucuk</b>	<b>Root</b> <b>Akar</b>
A	Light <i>Cahaya</i>	Gravity <i>Graviti</i>
B	Water <i>Air</i>	Gravity <i>Graviti</i>
C	Gravity <i>Graviti</i>	Touch <i>Sentuhan</i>
D	Water <i>Air</i>	Touch <i>Sentuhan</i>

- 12 Diagram 8 below shows some parts of the digestive system.  
*Rajah 8 di bawah menunjukkan sebahagian daripada sistem pencernaan manusia.*

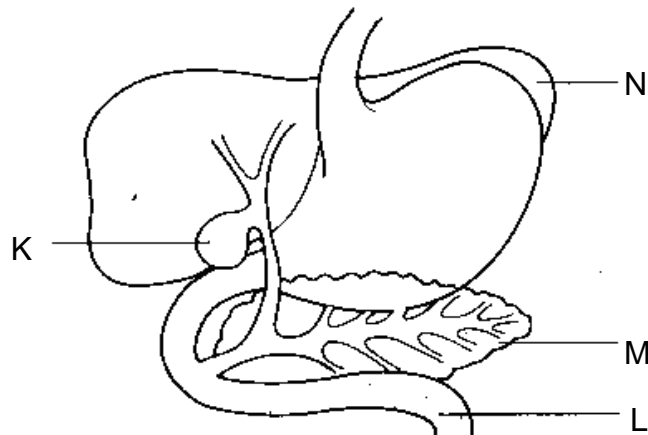


Diagram 8  
*Rajah 8*

Which part labelled K, L, M and N shows the correct function?  
*Bahagian manakah yang berlabel K, L, M and N menunjukkan fungsinya yang betul?*

- A K to store bile  
*K untuk menyimpan hempedu*
- B L to reabsorb water  
*L untuk menyerap semula air*
- C M to secretes hydrochloric acid  
*M untuk merembeskan asid hidroklorik*
- D N to secrete insulin  
*N untuk merembeskan insulin*

- 13 Diagram 9 shows an experiment carried out by a student.  
Rajah 9 menunjukkan satu eksperimen yang dijalankan oleh seorang pelajar .

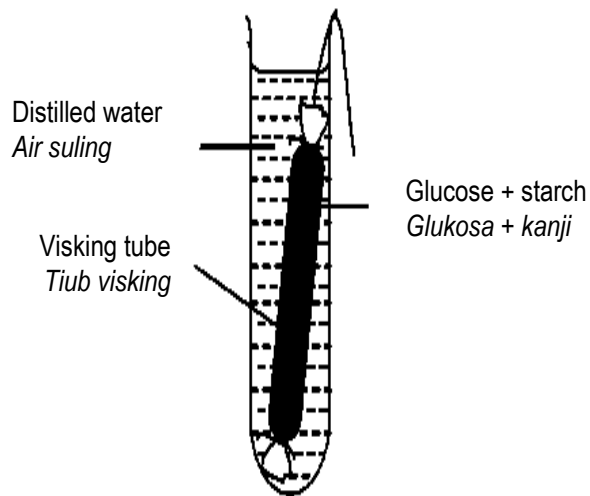


Diagram 9  
Rajah 9

Which of the following test should be carried out on distilled water ?  
Antara ujian berikut yang manakah sepatutnya dijalankan ke atas air suling ?

- A Benedict's test  
*Ujian Benedict*
- B Millon's reagent test  
*Ujian Millon*
- C DCPIP test  
*Ujian DCPIP*
- D Litmus paper test  
*Ujian kertas litmus*
- 14 Statements below shows the characteristics of an animal.  
Pernyataan di bawah menunjukkan ciri-ciri seekor haiwan

- Cold blooded animals  
*Berdarah sejuk*
- Lay eggs  
*Bertelur*
- Breathe through lungs  
*Bernafas melalui insang*

Which animals suite the statement above?  
Haiwan manakah yang sepadan dengan pernyataan di atas?

- A Chicken  
*Ayam*
- B Platypus  
*Platipus*
- C Tortoise  
*Kura-kura*
- D Shark

## Ikan jerung

- 15 The organisms below can be found in a certain habitat.  
Organisma-organisma di bawah boleh dijumpai di habitat tertentu.

**Toad, paddy, grasshopper, snake, eagle**  
**Kodok, padi, belalang, ular, helang**

Which of the following food chain exists in this habitat .  
Manakah antara rantai makanan berikut wujud di habitat ini.

- A grasshopper → paddy → toad → snake → eagle  
belalang → padi → kodok → ular → helang
- B grasshopper → toad → paddy → snake → eagle  
belalang → kodok → padi → ular → helang
- C paddy → grasshopper → toad → snake → eagle  
padi → belalang → kodok → ular → helang
- D paddy → toad → grasshopper → snake → eagle  
padi → kodok → belalang → ular → helang
- 16 Diagram 10 shows the apparatus set up for an experiment.  
Rajah 10 menunjukkan susunan radas satu eksperimen.

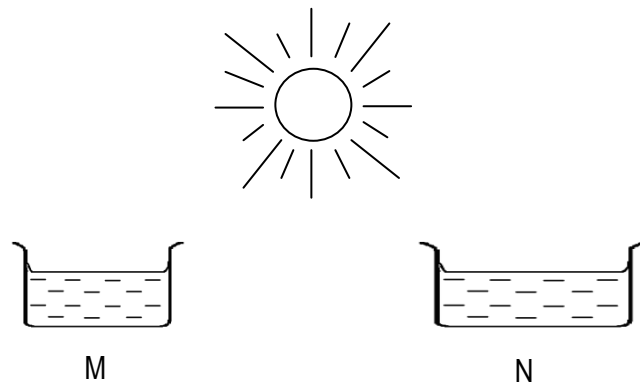


Diagram 10  
Rajah 10

What is the purpose of immersing the leaf in an alcohol?  
Apakah kepentingan merendamkan daun ke dalam alkohol?

- A To break down the cell wall  
Untuk memecahkan dinding sel
- B To remove the chlorophyll  
Untuk menyingkirkan klorofil
- C To color the leaf  
Untuk mewarnakan daun
- D To soften the leaf  
Untuk melembutkan daun

- 17 Diagram 11 shows two different containers, M and N with the same volume of water.  
*Rajah 11 menunjukkan dua bekas berbeza, M dan N dengan isipadu air yang sama.*



**Diagram 11**  
**Rajah 11**

Both container are placed under the Sun. The water in container N dries up first because the  
*Kedua-dua bekas diletakkan di bawah pancaran matahari. Air di dalam bekas N kering dahulu kerana*

- A density of the water in container N is lower  
*ketumpatan air dalam bekas N adalah lebih rendah*
- B water in container N has a larger surface area expose to the sunlight  
*air di dalam bekas N mempunyai luas permukaan terdedah yang lebih besar kepada cahaya matahari*
- C attraction force between the molecules of water in container N is weaker  
*daya tarikan antara molekul air dalam bekas N lebih lemah*
- D water molecules in container N moves more freely  
*molekul air dalam bekas N bergerak lebih bebas*

- 18 Diagram 12 shows the apparatus used for the electrolysis of water.  
*Rajah 12 menunjukkan radas yang digunakan untuk elektrolisis air.*

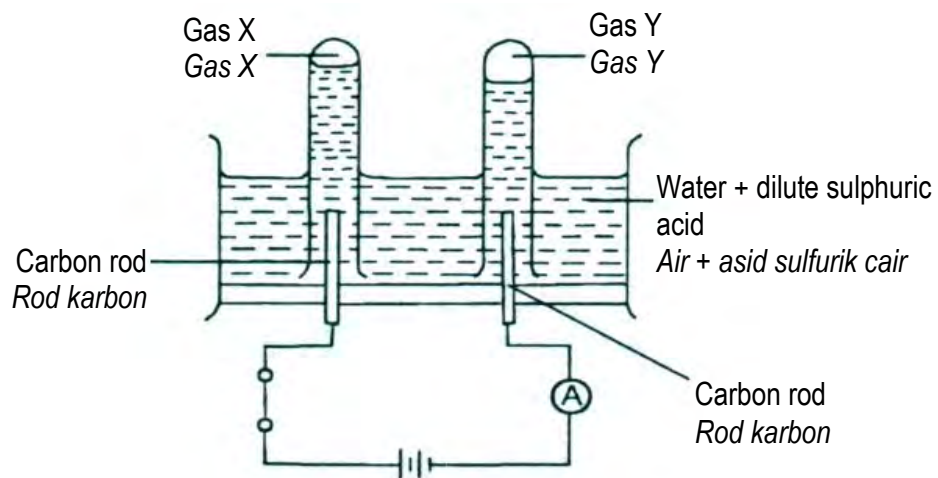


Diagram 12  
*Rajah 12*

Which of the following is true about the experiment?  
*Manakah antara berikut benar mengenai eksperimen tersebut?*

- A Gas X causes a burning wooden splinter to ignite  
*Gas X menyebabkan kayu uji berbara menyala*
- B Gas Y gives 'pop' sound when tested with glowing wooden splinter.  
*Gas Y menghasilkan bunyi 'pop' apabila diuji dengan kayu uji berbara*
- C Gas X will extinguished a burning wooden splinter  
*Gas X akan memadamkan kayu uji menyala*
- D Gas Y supports combustion  
*Gas Y menyokong pembakaran*

- 19 Diagram 13 shows an experiment conducted by students.  
 Diagram 13 menunjukkan satu eksperimen dijalankan oleh pelajar.

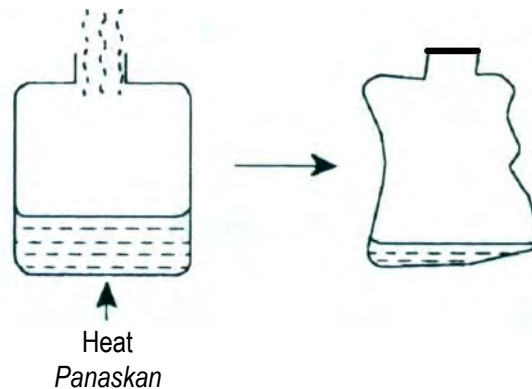


Diagram 13  
 Rajah 13

The water is heated in an open can until it boiled. The can is capped tightly, then is cooled rapidly by pouring cold water over it.

Which of the following statements is true?

*Air dipanaskan di dalam tin terbuka sehingga mendidih. Tin tersebut ditutup ketat, kemudian disejukkan dengan cepat dengan menuangkan air sejuk di atasnya.*

*Manakah antara pernyataan berikut adalah benar?*

- A This experiment showed that air is a mixture of gases  
*Eksperimen ini menunjukkan udara adalah campuran gas-gas*
- B The can collapsed because the air pressure inside the can was lower than the atmospheric pressure  
*Tin kemek disebabkan tekanan udara di dalam tin lebih rendah daripada tekanan atmosfera*
- C When the water inside the can was cooled rapidly, the air pressure inside the can increased  
*Apabila air di dalam tin disejukkan dengan cepat, tekanan udara di dalam tin meningkat*
- D When the can was capped tightly, air could get into and out of the can  
*Apabila tin ditutup dengan ketat, udara boleh masuk dan keluar dalam tin*
- 20 Diagram 14 shows a student pulling a bag through a distance of 4.0 m with a force of 60 N.  
 Rajah 14 menunjukkan seorang pelajar menarik begnya sejauh 4.0 m dengan menggunakan daya 60 N.

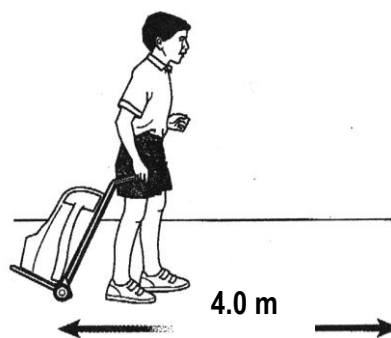


Diagram 14  
 Rajah 14

What is the work done by the student?

*Berapakah kerja yang dilakukan oleh pelajar tersebut?*

- A 15 J  
 B 24 J

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- C 30 J  
D 240 J

- 21 Diagram 15 shows two air pucks, P and Q.  
*Rajah 15 menunjukkan dua pak udara, P dan Q.*

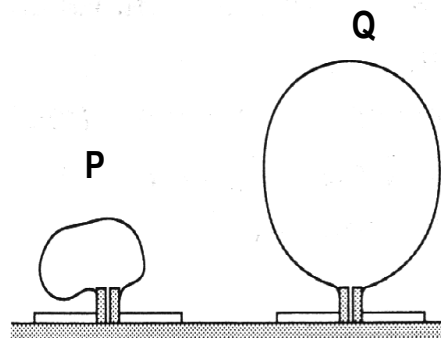
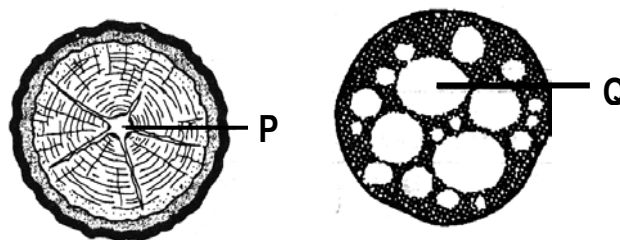


Diagram 15  
*Rajah 15*

Q moves easily when pushed compared to P. This is because  
*Q bergerak lebih mudah apabila ditolak berbanding P. Ini disebabkan*

- A P is heavier than Q  
*P lebih berat daripada Q*  
B The frictional force on P is greater  
*Daya geseran pada P adalah lebih besar*  
C The gravitational force on P is greater.  
*Daya tarikan graviti pada P adalah lebih besar*  
D The air in P is denser than the air in Q.  
*Udara dalam P lebih tumpat daripada udara dalam Q*
- 22 Diagram 16 shows the cross section of stems of plant P and Q.  
*Rajah 16 menunjukkan keratan rentas batang bagi tumbuhan P dan Q.*



*Rajah 16*

Diagram 16

Which of the following is **true** about plant P and Q?  
*Antara berikut yang manakah **benar** tentang tumbuhan P dan Q?*

	Plant P <i>Tumbuhan P</i>	Plant Q <i>Tumbuhan Q</i>
A	Rambutan tree <i>Pokok rambutan</i>	Palm oil tree <i>Pokok kelapa sawit</i>
B	Lotus <i>Teratai</i>	Maize plant <i>Pokok jagung</i>
C	Mango tree <i>Pokok mangga</i>	Water lily <i>Telipok</i>

D	Durian tree <i>Pokok durian</i>	Papaya tree <i>Pokok betik</i>
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- 23 Diagram 17 shows a model of a four-legged animal.  
*Rajah 17 menunjukkan suatu model haiwan berkaki empat.*

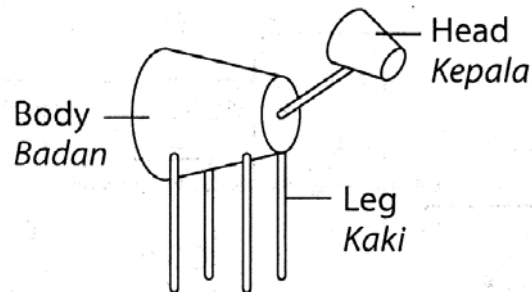


Diagram 17  
*Rajah 17*

The stability of the model can be increased by  
*Kestabilan model itu dapat ditingkatkan dengan*

- A Extending the length of the legs.  
*Memanjangkan kakinya*
  - B Reducing the size of the body  
*Mengurangkan saiz badannya*
  - C Increasing the size of the head  
*Menambahkan saiz kepalanya*
  - D Spreading the legs apart  
*Mengangkangkan kakinya.*
- 24 Which of the following spanners uses the least force when loosening a nut?  
*Antara spanar berikut yang manakah menggunakan paling sedikit daya semasa melonggarkan nat?*



Diagram 18 shows the set up of an experiment.  
*Rajah 18 menunjukkan susunan radas satu eksperimen.*

- 25 Diagram 18 shows the set up of an experiment.  
*Rajah 18 menunjukkan susunan radas satu eksperimen.*

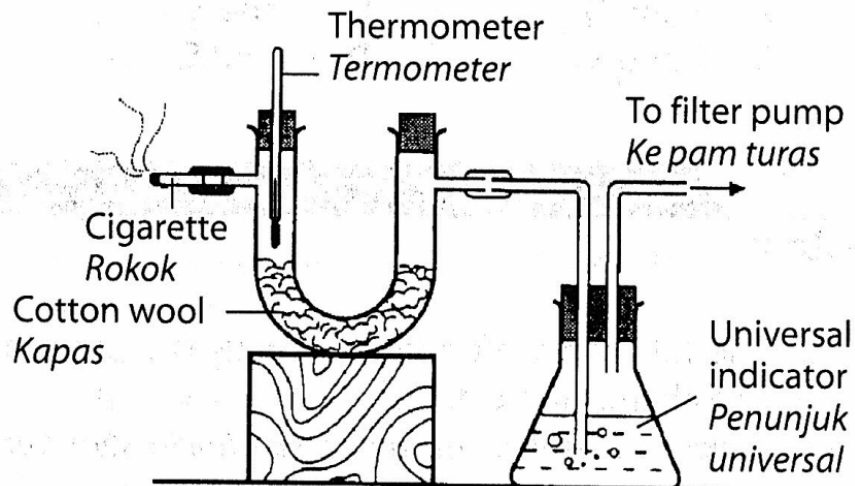


Diagram 18  
*Rajah 18*

Which of the following can be observed during experiment?  
*Di antara berikut yang manakah dapat diperhatikan dari eksperimen tersebut?*

- I Thermometer reading increase  
*Bacaan termometer meningkat.*
  - II Cotton wool turns brown  
*Kapas bertukar menjadi warna perang.*
  - III The colour of universal indicator does not change.  
*Warna larutan penunjuk semesta tidak berubah.*
- A I and II only  
*I dan II sahaja*
  - B I and III only  
*I dan III sahaja*
  - C II and III only  
*II dan III sahaja*
  - D I, II and III  
*I, II dan III*

- 26 Diagram 19 shows the transport of gas in blood vessel.  
Rajah 19 menunjukkan pengangkutan gas di dalam salur darah.

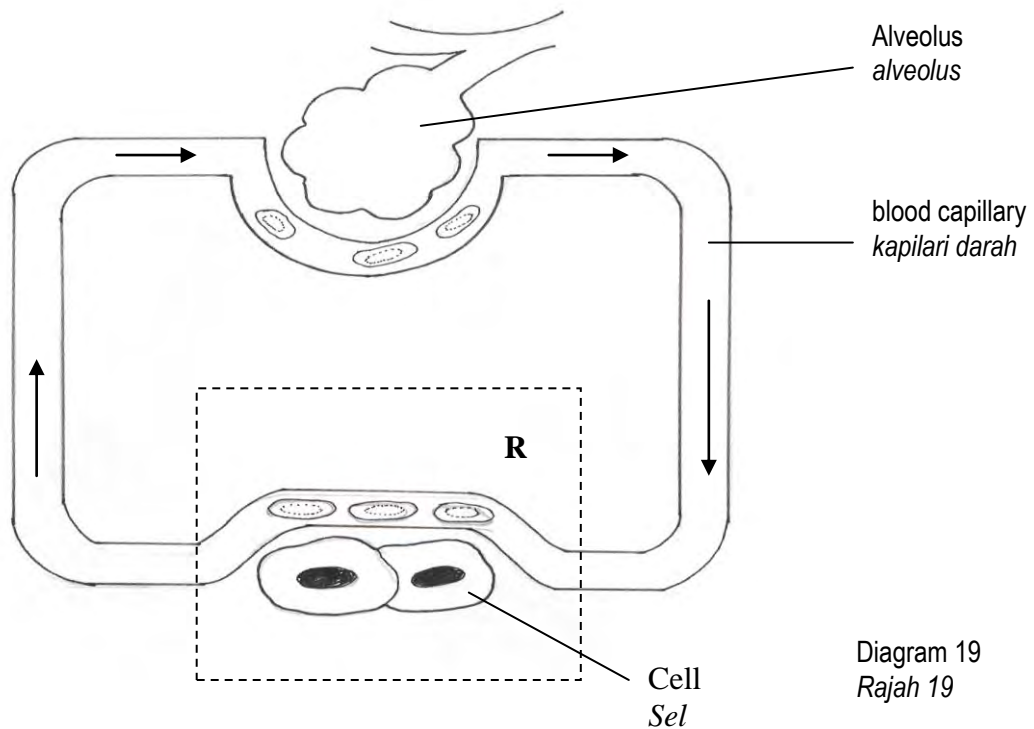


Diagram 19  
Rajah 19

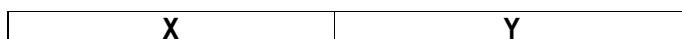
Based on diagram 19, what happens at R.  
Berdasarkan rajah 19, apakah yang berlaku di R

- A Carbon dioxide is used by the cells for respiration  
*Karbon dioksida digunakan oleh sel untuk berespirasi*
- B Oxygen diffuses out of the blood capillaries into the cells  
*Oksigen meresap keluar dari kapilari darah ke dalam sel*
- C Oxygen diffuses from the cells into the blood capillaries  
*Oksigen meresap dari sel ke dalam kapilari darah*
- D Carbon dioxide combines with haemoglobin to form oxyhaemoglobin  
*Karbon dioksida berpadu dengan haemoglobin untuk membentuk oksihemoglobin*

- 27 The information below shows the flow of urea being removed from the human body.  
Maklumat di bawah menunjukkan aliran urea dibuang dari badan.

Liver → Kidney → X → Y

What are X and Y?  
Apakah X dan Y?



A	Urethra Uretra	Urinary bladder Pundi kencing
B	Urinary bladder Pundi kencing	Ureter Ureter
C	Ureter Ureter	Urinary bladder Pundi kencing
D	Ureter Ureter	Urethra Uretra

28 Diagram 20 shows an organism.  
Rajah 20 menunjukkan sejenis organisma

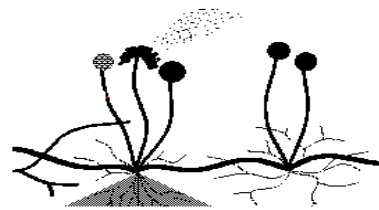


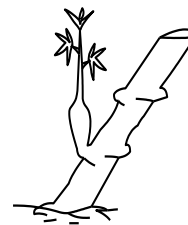
Diagram 20  
Rajah 20

Which of the following organisms reproduce in the same way as the organism in diagram 20?  
Antara organism berikut yang manakah membiak dengan cara yang sama seperti organism dalam rajah 20?

A



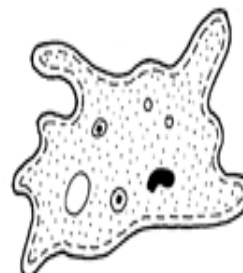
B



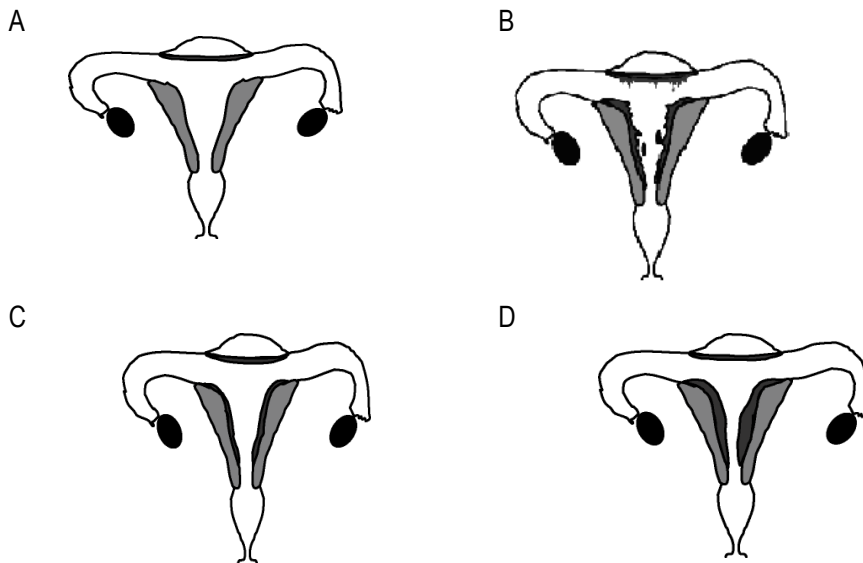
C



D



29 Which of the diagrams represent the premenstrual phase?  
*Rajah yang manakah mewakili fasa pra-haid?*



30 Diagram 21 shows a cross section of dicotyledonous seed.  
*Rajah 21 menunjukkan keratan rentas bijibenih dikotiledon.*

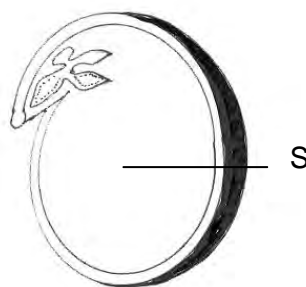


Diagram 21  
*Rajah 21*

Which of the following is the function of S ?  
*Manakah fungsi S?*

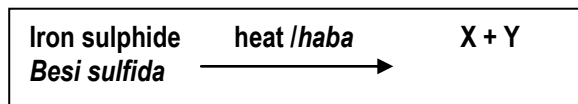
- A Protects the seed  
*Melindungi bijibenih*
- B Stores and provides food for the seed  
*Menyimpan dan menyediakan makanan untuk bijibenih*

- C Part of the embryo that develops into a shoot  
*Bahagian embrio yang membentuk pucuk*
- D Part of the embryo that develops into a root  
*Bahagian embrio yang membentuk akar*

31 Which of the following physical characteristics are used to measure growth?  
*Antara ciri fizikal berikut, yang manakah digunakan untuk mengukur pertumbuhan?*

- I Height  
*Ketinggian*
- II Body Weight  
*Berat badan*
- III Body shape  
*Bentuk badan*
- A I and II only  
*I dan II sahaja*
- B I and III only  
*I dan III sahaja*
- C II and III only  
*II dan III sahaja*
- D I, II and III  
*I, II dan III*

32 Equation below shows the effect of heat on iron sulphide.  
*Persamaan di bawah menunjukkan kesan haba terhadap besi sulfida.*



Based on the word equation, identify X and Y.  
*Berdasarkan persamaan perkataan, kenalpasti X dan Y.*

- | X                                  | Y   |
|------------------------------------|---|
| A Iron oxide<br><i>Besi oksida</i> | Water<br><i>Air</i>                       |
| B Iron oxide<br><i>Besi oksida</i> | Sulphur dioxide<br><i>Sulfur dioksida</i> |
| C Iron<br><i>Besi</i>              | Sulphur dioxide<br><i>Sulfur dioksida</i> |
| D Sulphur<br><i>Sulfur</i>         | Carbon dioxide<br><i>Karbon dioksida</i>  |

- 33 Table 22 shows the petroleum fractions and their boiling points.  
*Jadual 22 menunjukkan pecahan petroleum dan takat didih masing-masing.*

Petroleum fraction <i>Pecahan petroleum</i>	Boiling point <i>Takat didih</i>
P	30°C – 80°C
Q	80°C – 120°C
R	120°C – 160°C
S	160°C – 200°C

Table 22  
*Jadual 22*

Which of the following statements are **true**?  
*Antara pernyataan berikut, yang manakah benar?*

- A R burns easier than Q  
*R lebih mudah terbakar daripada Q*
- B Q is more viscous than R  
*Q lebih likat daripada R*
- C P is darker in colour than Q  
*P lebih gelap warnanya daripada Q*
- D S produces the most soot when burnt  
*S menghasilkan paling banyak jelaga apabila dibakar*
- 34 Diagram 23 shows the pieces of paper attracted by the plastic ruler which is rubbed with a piece of woolen cloth.  
*Rajah 23 menunjukkan cebisan-cebisan kertas ditarik oleh pembaris plastik yang telah digosok dengan kain bulu.*

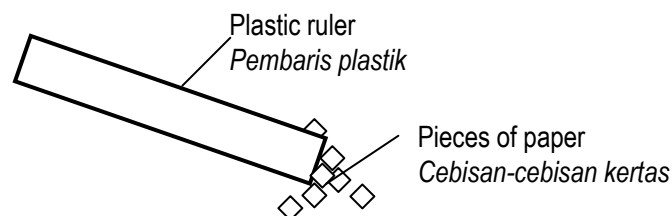


Diagram 23  
*Rajah 23*

What is the force causes this phenomena?  
*Apakah jenis daya yang menyebabkan fenomena tersebut?*

- A Electrostatic force  
*Daya elektrostatik*

- B Gravitational force  
*Daya tarikan graviti*
- C Magnetic force  
*Daya magnet*
- D Electrical force  
*Daya elektrik*

- 35 Diagram 24 shows an electric circuit. Four pieces of wire J, K, L and M are separately used to connect the terminal PQ.

*Rajah 24 menunjukkan satu litar elektrik.. Empat utas wayar, J, K, L dan M disambungkan secara berasingan ke terminal PQ.*

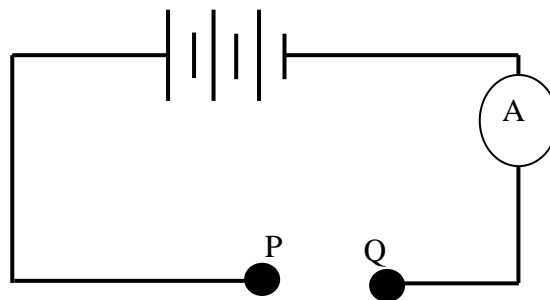


Diagram 24  
*Rajah 24*

The following table shows the ammeter readings for each wire used.

*Jadual berikut menunjukkan bacaan ammeter untuk setiap wayar yang digunakan.*

Wire <i>Wayar</i>	Ammeter reading (A) <i>Bacaan ammeter (A)</i>
J	1.0
K	0.5
L	1.6
M	0.3

Which wire has the least resistance?

*Wayar yang manakah mempunyai rintangan paling rendah?*

- A J
- B K
- C L
- D M

- 36 Diagram 25 shows two bar magnets placed side by side to one another.  
*Rajah 25 menunjukkan dua magnet bar diletakkan sebelah menyebelah di antara satu sama lain.*

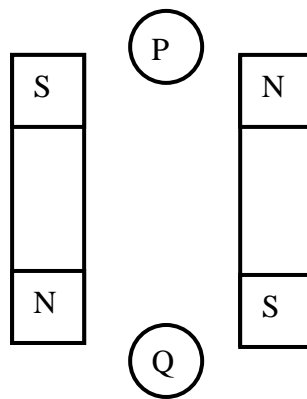


Diagram 25  
*Rajah 25*

Two compasses are placed in position P and Q. Which of the following correctly shows the directions of the compass needles P and Q?  
*Dua buah kompas diletakkan pada kedudukan P dan Q. Antara berikut, yang manakah menunjukkan arah jarum kompas P dan Q?*

	P	Q
A	→	←
B	→	→
C	←	←
D	←	→

- 37 Diagram 26 shows the electrical energy transmission and distribution system.  
Rajah 26 menunjukkan sistem penghantaran dan pengagihan tenaga elektrik.

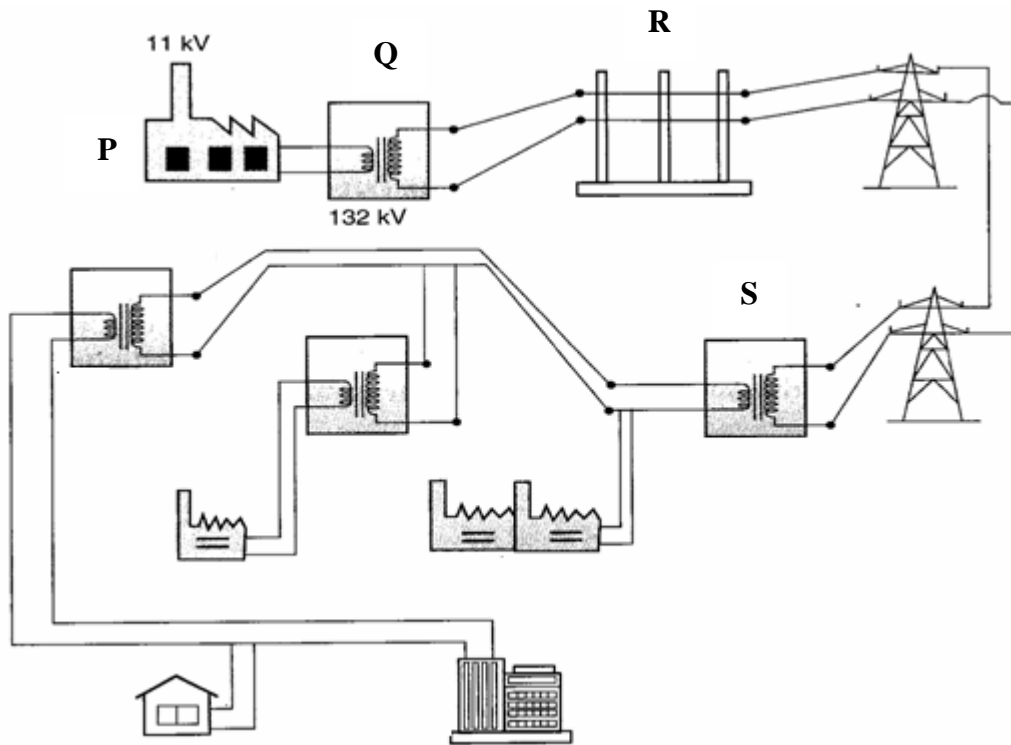


Diagram 26  
Rajah 26

Which of these is labelled correctly?  
Antara berikut, yang manakah dilabel dengan betul?

- A P - National Grid Network  
Rangkaian Grid Nasional
  - B Q - Step-down transformer  
Transformer injak turun
  - C R - Switch zone  
Lapangan suis
  - D S - Step-up transformer  
Transformer injak naik
- 38 3 kW water heater is switched on 3 hours a day. How much is the cost if the water heater is used for 30 days? The charge of one unit of electrical energy is RM 0.30.  
Sebuah pemanas air yang berkuasa 3 kW dipasang selama 3 jam sehari. Berapakah kos penggunaan pemanas air ini apabila digunakan selama 30 hari? Kos satu unit tenaga elektrik ialah RM 0.30.

- A RM 2.70

- B RM 8.10  
C RM 27.00  
D RM 81.00

- 39 The following information shows the sequence of the death of star.  
*Maklumat berikut menunjukkan urutan kematian bintang.*

**P – Supernova**  
*Supernova*  
**Q – Formation of black hole**  
*Pembentukan lohong hitam*  
**R – Supergiant stars**  
*Bintang super raksasa*  
**S – Red giant stars**  
*Bintang raksasa merah*

Based on the above information, arrange the sequence that occurs when a star dies.  
*Berdasarkan maklumat di atas, susun urutan yang berlaku apabila sebuah bintang mati.*

- A R, S, P, Q  
B S, R, P, Q  
C S, R, Q, P  
D R, S, Q, P
- 40 The following statements concern about the developments in space technology.  
*Pernyataan-pernyataan berikut adalah mengenai perkembangan dalam teknologi angkasa lepas.*
- **To predict the weather**  
*Untuk membuat ramalan cuaca*
  - **To locate natural resources**  
*Untuk mengesan sumber semula jadi*
  - **To help navigating ships**  
*Untuk memberi petunjuk arah kepada kapal*

Which technology helps to carry out these functions?  
*Antara teknologi berikut, yang manakah membantu dalam melaksanakan tugas-tugas ini?*

- A Probe  
*Prob*  
B Telescope  
*Teleskop*  
C Satellite  
*Satelit*  
D Space shuttle  
*Kapal angkasa ulang alik*

END OF QUESTION PAPER

**KERTAS SOALAN TAMAT****INFORMATION FOR CANDIDATES  
MAKLUMAT UNTUK CALON**

1. This question paper consists of 40 questions.  
*Kertas soalan ini mengandungi 40 soalan.*
2. Answer **all** questions.  
*Jawab **semua** soalan.*
3. Each question is followed by four alternative answers, **A, B, C** or **D**. For each question, choose **one** answer only. Blacken your answer on the objective answer sheet provided.  
*Tiap-tiap soalan diikuti oleh empat pilihan jawapan, iaitu **A, B, C** atau **D**. Bagi setiap soalan, pilih **satu** jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.*
4. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the new answer.  
*Jika anda hendak menukarkan jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru*
5. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah yang mengiringi soalan tidak mengikut skala kecuali dinyatakan.*
6. You may use a non – programmable scientific calculator.  
*Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*

55/2  
 Science  
 Paper 2  
 August, 2010  
 $1\frac{1}{2}$  hours

Nama : .....

Angka Giliran : .....

Tingkatan : .....3.....



## PEPERIKSAAN PERCUBAAN BERSAMA PMR 2010

### JABATAN PENDIDIKAN NEGERI PERLIS DAN PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA SEKOLAH MENENGAH MALAYSIA CAWANGAN PERLIS

#### SAINS

Kertas 2

Satu jam tiga puluh minit

#### JANGAN BUKA KERTAS SOALAN INI SEHINGGA DI BERITAHU

1. *Kertas soalan ini adalah dalam dwibahasa.*
2. *Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
3. *Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam bahasa Inggeris atau bahasa Melayu.*
4. *Calon dikehendaki membaca maklumat di halaman 2 atau halaman 3.*

Bahagian	Soalan	Markah penuh	Markah Diperolehi
A	1	6	
	2	6	
	3	6	
	4	6	
	5	9	
	6	7	
B	7	10	
	8	10	
<b>Jumlah</b>		<b>60</b>	

Kertas soalan ini mengandungi 15 halaman bercetak .

**Section A**

- 1 Diagram 1 shows three measuring tools.  
Rajah 1 menunjukkan 3 alat penyukat.

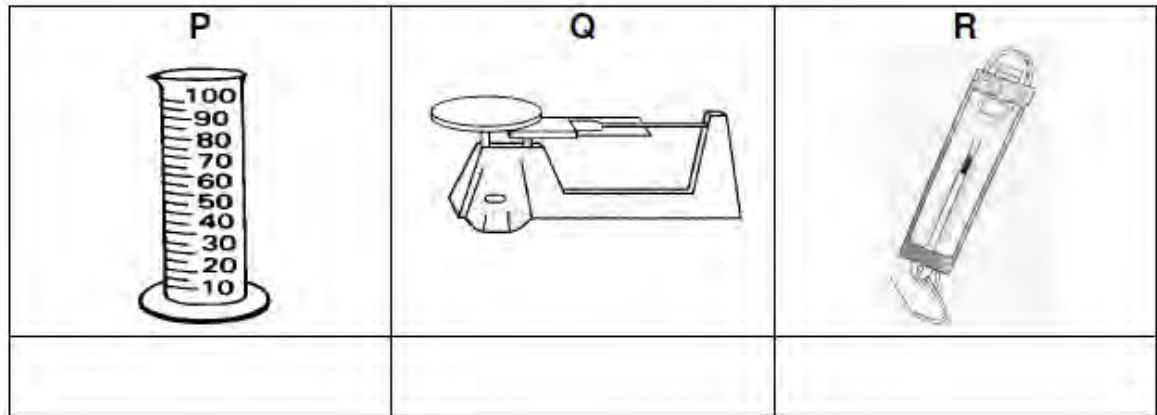


Diagram 1  
Rajah 1

- a) On Diagram 1, name the tools P, Q and R with the following words:  
Pada rajah 1, namakan alat P, Q dan R dengan perkataan-perkataan berikut:

Spring balance Neraca spring	Triple beam balance Neraca tiga palang	Measuring cylinder Silinder penyukat
---------------------------------	---	---

[3 marks]

- b) Draw lines to match between the measuring tools and its uses.  
Lukiskan garisan untuk memadankan alat-alat penyukat itu dengan penggunaannya.

**Measuring tool**  
**Alat penyukat**

**Uses**  
**Kegunaan**

P

Measure the mass of an object.  
Menyukat jisim sesuatu objek.

Q

Measure the volume of a liquid.  
Menyukat isipadu cecair.

R

Measure the diameter of an object.  
Menyukat diameter sesuatu objek.

Measure the weight of an object.  
Menyukat berat sesuatu objek.

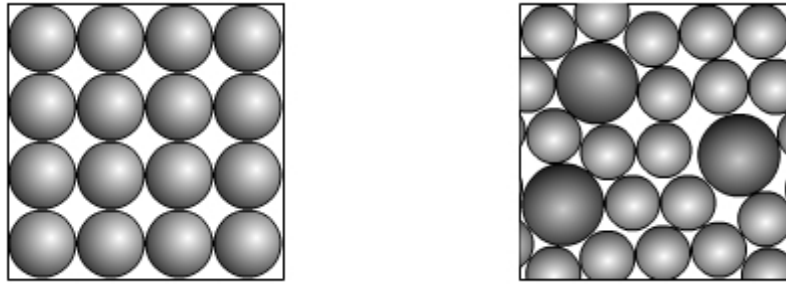
[2 marks]

- c) Name one measuring tools that can be used to measure mass of an object, other than the above tools.  
Namakan satu alat, selain daripada alat-alat di atas yang digunakan untuk mengukur jisim sesuatu objek.

[1 mark]

2. Diagram 2.1 shows different form of resources on earth.

Rajah 2.1 menunjukkan sumber-sumber di bumi dalam bentuk yang berbeza.



J

K

Diagram 2.1  
Rajah 2.1

- a) State whether they are element or mixtures.  
Nyatakan sama ada bahan tersebut adalah unsur atau campuran.

J : .....

K : .....

[2 marks]

- b) Diagram 2.2 shows a compound normally found on our Earth.  
Rajah 2.2 menunjukkan satu sebatian yang terdapat di Bumi.

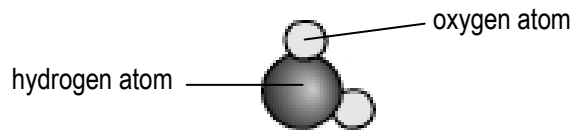


Diagram 2.2  
Rajah 2.2

- i) Name the compound as shown in Diagram 2.2.  
Namakan sebatian yang ditunjukkan dalam Rajah 2.2.
- .....
- ii) How do you recognize the compound?  
Bagaimanakah anda mengenalpasti sebatian?
- .....
- iii) Name **one** method that can be used to break down this compound into its elements .  
Namakan **satu** kaedah yang digunakan untuk menguraikan sebatian ini kepada unsur-unsurnya.
- .....

[3 marks]

- c) The steps below are used to separate a mixture of three different materials : sand , iron powder and common salt crystals.  
Langkah-langkah di bawah digunakan untuk mengasingkan campuran tiga jenis bahan yang berbeza : pasir, serbuk besi dan garam biasa.

- |   |
|---|
| P - Dissolving in water<br><i>Melarutkan dalam air</i><br>Q - Using a magnet<br><i>Menggunakan magnet</i><br>R - Evaporating<br><i>Menyejat</i><br>S - Filtrating<br><i>Menanis</i> |
|---|

State the correct sequence of steps to separate the three substances?

*Nyatakan langkah-langkah yang betul untuk mengasingkan ketiga-tiga bahan tersebut mengikut urutan?*

[1 mark]

/6
----

3 Diagram 4 shows the apparatus used in the electrolysis of water.

*Rajah 4 menunjukkan alat yang digunakan dalam elektrolisis air*

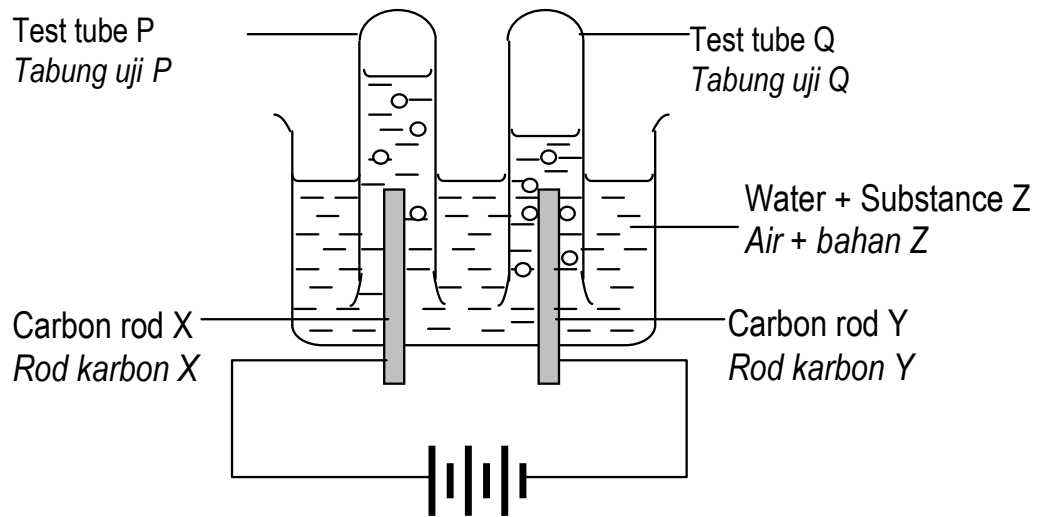


Diagram 3

*Rajah 3*

(a) Suggest **one** example of substance Z.  
*Cadangkan **satu** contoh untuk bahan Z*

[1 mark]

(b) Which of the two carbon rods function as the positive electrode?  
*Rod karbon yang mana satukah berfungsi sebagai elektrod positif ?*

[1 mark]

(c) When the circuit is switched on, some gas is collected in each test tube.  
*Apabila suis dihidupkan, gas akan terkumpul dalam setiap tabung uji.*

(i) What is the gas collected in test tubes P and Q?  
*Gas apakah yang terkumpul di dalam tabung uji P dan Q?*

.....

(ii) Suggest **one** way to identify the gas collected in test tube P.  
*Cadangkan satu ujian untuk mengenalpasti gas yang terkumpul di dalam tabung uji P*

.....

(iv) Suggest a way to identify the gas collected in test tube Q .  
*Cadangkan satu ujian untuk mengenalpasti gas yang terkumpul di dalam tabung uji Q*

.....

[3 marks]

(d) State the expected ratio of the volume of the gas collected in test tube Q to the volume of the gas collected in test tube P.  
*Nyatakan nisbah isipadu gas yang terkumpul dalam tabung uji Q kepada nisbah isipadu gas yang terkumpul dalam tabung uji P*

.....

[1 mark]

/6
----

4 Diagram 4 shows a device that applied the principle of air pressure.  
*Rajah 4 menunjukkan peralatan yang menggunakan prinsip tekanan udara.*

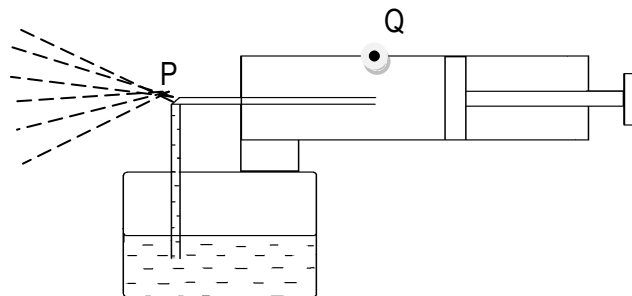


Diagram 4  
*Rajah 4*

(a) (i) Name the device shown in diagram 4.  
*Namakan peralatan yang ditunjukkan pada rajah 4.*

.....

(ii) State one uses of the device shown in diagram 4.  
*Nyatakan satu kegunaan peralatan dalam rajah 4.*

.....

[2 marks]

- (b) (i) What will happen to the air pressure in the cylinder, when the piston pushed inwards?  
*Apakah akan berlaku pada tekanan udara di dalam silinder, apabila ombok ditolak ke dalam?*

.....  
 .....

- (ii) State one inference for the answer in (b)(i).  
*Nyatakan satu inferen bagi jawapan di (b)(i).*

.....  
 .....

[2 marks]

- (c) What will happen to the air pressure at P, when the piston is pushed inwards?  
*Apakah akan berlaku pada tekanan udara di P, apabila ombok ditolak kedalam?*

.....  
 .....

[1 mark]

- (d) Based on diagram 4, what will happen if there is a hole at point Q?  
*Berdasarkan rajah 4, apakah akan berlaku sekiranya terdapat lubang pada titik Q?*

.....

[1 mark]

/6
----

5. Diagram 5 shows a process that occurs in the female reproductive organ.  
*Rajah 5 menunjukkan suatu proses yang berlaku dalam organ pembiakan perempuan.*

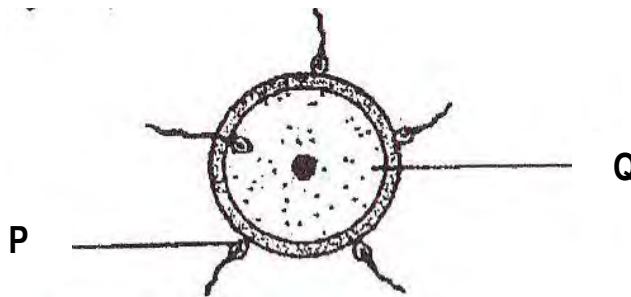


Diagram 5  
*Rajah 5*

(a) (i) Name the process in Diagram 5.  
*Namakan proses di Rajah 5.*

.....

(ii) Where does the process take place?  
*Di manakah proses ini berlaku?*

.....

[2 marks]

(b) Name the cells that are labelled P and Q.  
*Namakan sel yang dilabelkan P dan Q.*

P : .....

Q : .....

[2 marks]

(c) Where are cells P and Q produced?  
*Di manakah sel P dan Q dihasilkan?*

P : .....

Q : .....

[2 marks]

(d) What is formed after process (a) (i)?  
*Apakah yang terbentuk selepas proses (a) (i)?*

.....

[1 mark]

(e) What will happen to the cell Q if it is not fertilised by the cell P after 24 hours?  
*Apakah yang akan berlaku kepada sel Q sekiranya ia tidak disenyawakan oleh sel P selepas 24 jam?*

.....

[1 mark]

- 6 Diagram 6.1 shows the electrical power transmission and distribution system.  
*Rajah 6.1 menunjukkan bahagian sistem penghantaran dan pengagihan kuasa elektrik*

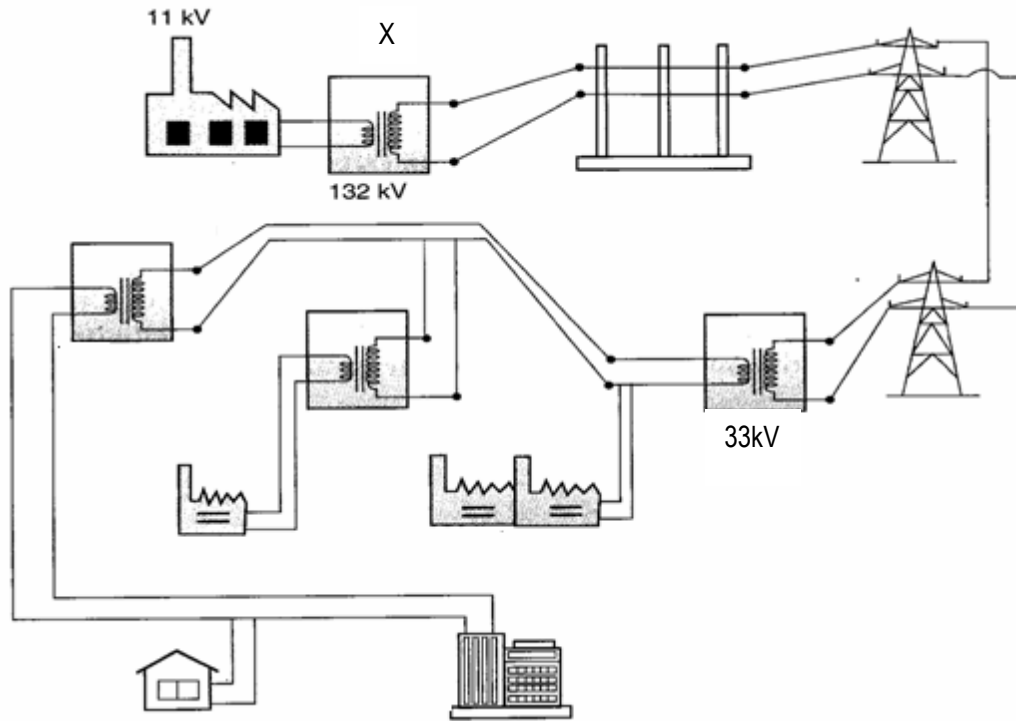


Diagram 6.1  
*Rajah 6.1*

- (a) i. What is the function of transformer station?  
*Apakah fungsi stesen transformer?*

.....  
 [1 mark]

- ii. How does the voltage is decreased from 132 kV to 33 kV?  
*Bagaimanakah voltan dikurangkan dari 132kV kepada 33kV?*

.....  
 [1 mark]

Diagram 6.2 shows a type of transformer.  
 Rajah 6.2 menunjukkan sejenis transformer.

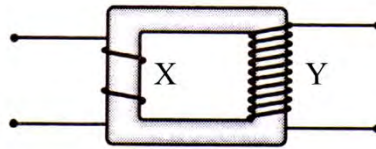


Diagram 6.2  
 Rajah 6.2

(b) (i) Why is it called a step-up transformer?  
 Kenapakah ia dipanggil transformer injak naik?

.....

(ii) Explain the effect of increasing more coils at Y  
 Terangkan kesan menambahkan bilangan gegelung di Y.

.....

[2 marks]

(c) Diagram 6.3 shows two types of transformers  
 Diagram 6.3 menunjukkan dua jenis transformer.

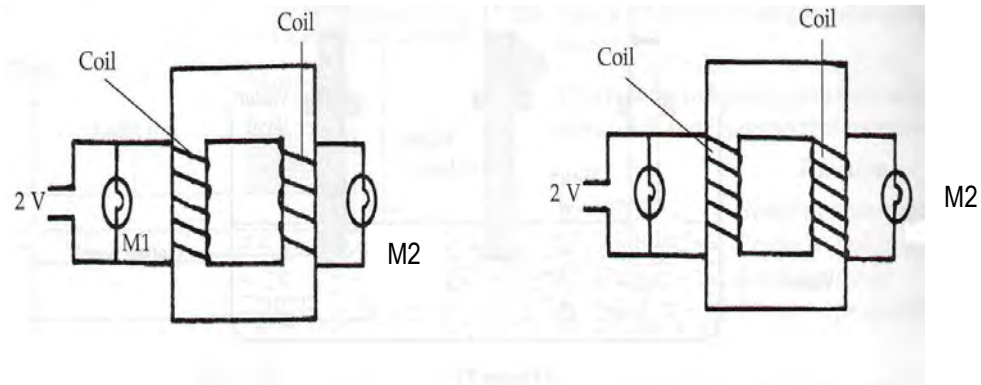


Diagram 6.3 a

Diagram 6.3 b

(i) What is the difference between the two transformers?  
 Apakah perbezaan di antara dua jenis transformer di atas?

.....

[ 1 mark ]

(ii) Explain the brightness of bulb M2 for Diagram 6.3 (a) and 6.3(b)  
 Jelaskan kecerahan mentol M2 dalam dua jenis transformer tersebut.

.....

[2 marks]

/7
----

7 (a) Diagram 7.1 shows 4 types o plants, P, Q, R and S.  
*Rajah 7.1 menunjukkan empat jenis tumbuhan, P, Q, R dan S.*

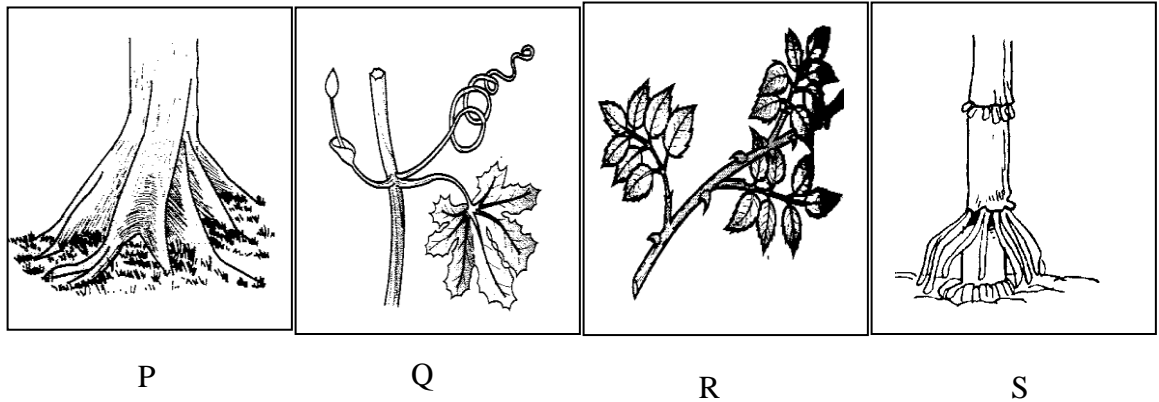


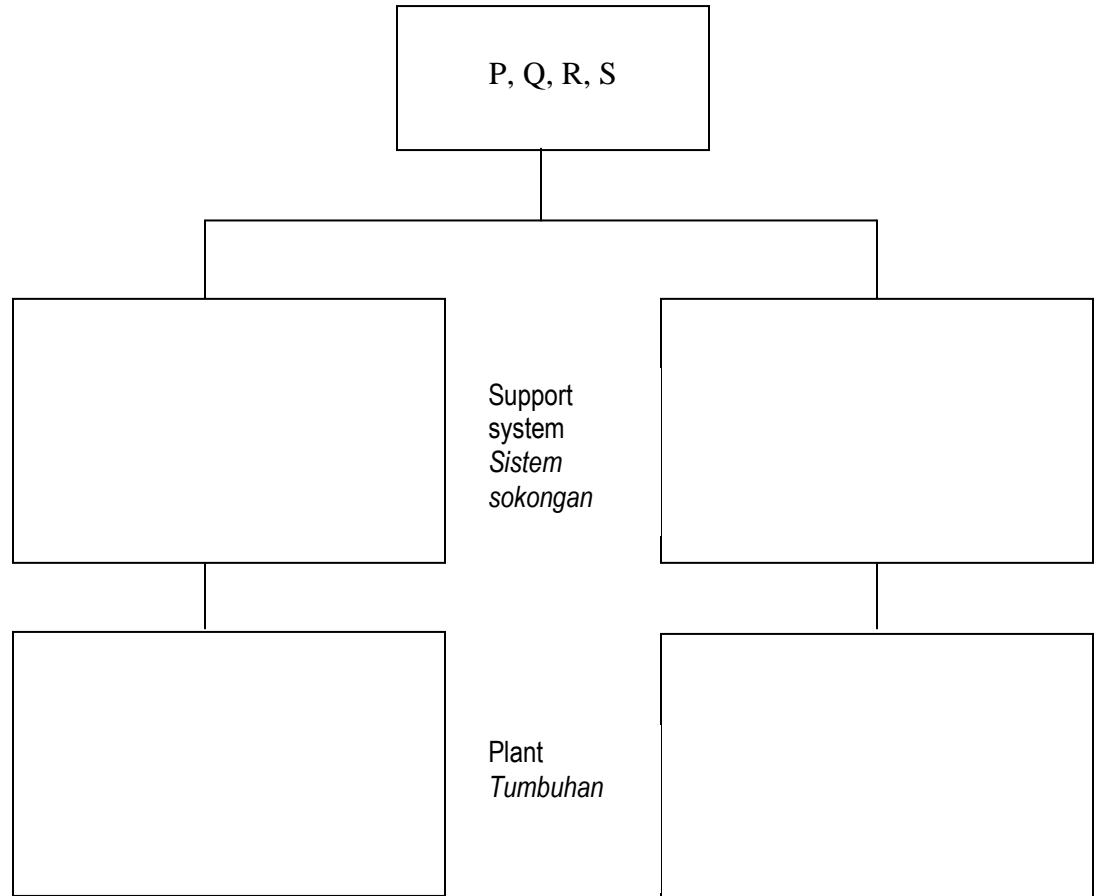
Diagram 7.1  
*Rajah 7.1*

(i) Based on your observation, state the type support system in plants P, Q, R and S  
*Berdasarkan pemerhatian anda, nyatakan jenis sistem sokongan bagi tumbuhan P, Q, R dan S.*

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

[4 marks]

- (ii) Classify P, Q, R and S into two groups based on their support system.  
*Kelaskan P, Q, R dan S kepada dua kumpulan berdasarkan sistem sokongan mereka.*



[ 4 marks]

- (b) (i) Diagram 7.2 shows a type of aquatic plant in two different situations.  
*Rajah 7.2 menunjukkan sejenis tumbuhan akuatik dalam dua situasi yang berlainan.*

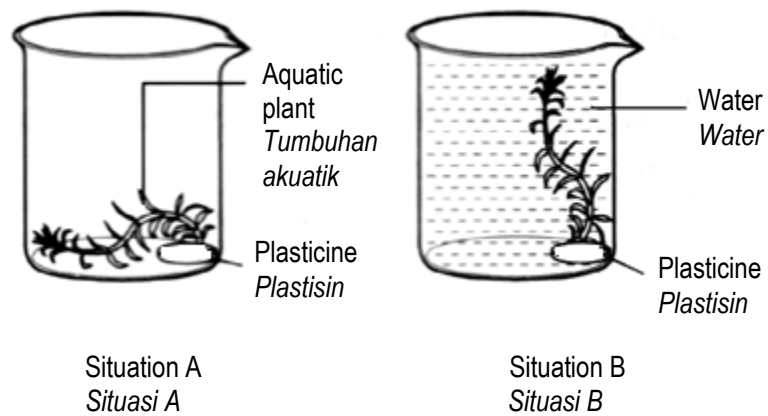


Diagram 7.2  
*Rajah 7.2*

Based on your observation in Diagram 7.2, state **one** inference about the condition of the plant.

Berdasarkan pemerhatian dalam Rajah 7.2, nyatakan **satu** inferens berkaitan keadaan tumbuhan tersebut..

.....

.....

- (ii) Predict what will happen to the plant in situation B if the plasticine is removed?  
*Ramalkan apakah yang akan berlaku kepada tumbuhan dalam situasi B apabila plastisin dikeluarkan?*

.....

[ 2 marks]

/10
-----

- 8 Diagram 8(a) shows two identical cars with different colour.  
*Rajah 8(a) menunjukkan dua buah kereta yang sama dengan warna yang berbeza.*



**X**



**Y**

Diagram 8(a)  
 Rajah 8(a)

- a) State the different in colour between car X and car Y .  
*Nyatakan perbezaan antara kereta X dan kereta Y dari segi warna.*

.....

[1 mark]

- b) i) If both car are put under sunlight, which car will have higher temperature?  
*Jika kedua-dua kereta diletakkan diletakkan di bawah cahaya matahari, kereta manakah akan mempunyai suhu yang lebih tinggi?*

.....

- ii) Give reason for your answer in b(i)  
*Berikan alasan kepada jawapan anda dalam b(i)*

.....

[2 marks]

Diagram 8(b) shows the apparatus set up to study the heat transfer.  
*Rajah 8(b) menunjukkan radas yang disediakan bagi mengkaji pemindahan haba.*

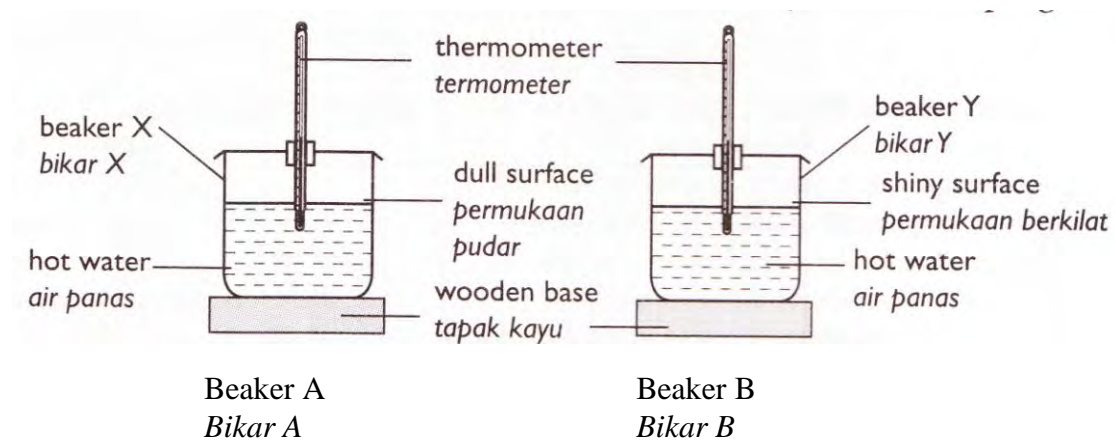


Diagram 8(b)  
*Rajah 8(b)*

- (c) State the type of heat transfer that shown in the diagram.  
*Nyatakan jenis pemindahan haba yang ditunjukkan di dalam rajah..*

.....  
[1 mark]

- (d) State the hypothesis for the experiment.  
*Nyatakan hipotesis bagi eksperimen ini..*

.....  
[1 mark]

- (e) State the manipulated variables involved in this experiment.  
*Nyatakan pembolehubah yang dimanipulasikan bagi eksperimen ini.*

.....  
[1 mark]

- (f) Predict the temperature if wooden base is replace by iron base?  
*Ramalkan suhu jika tapak kayu ditukar kepada tapak besi?*

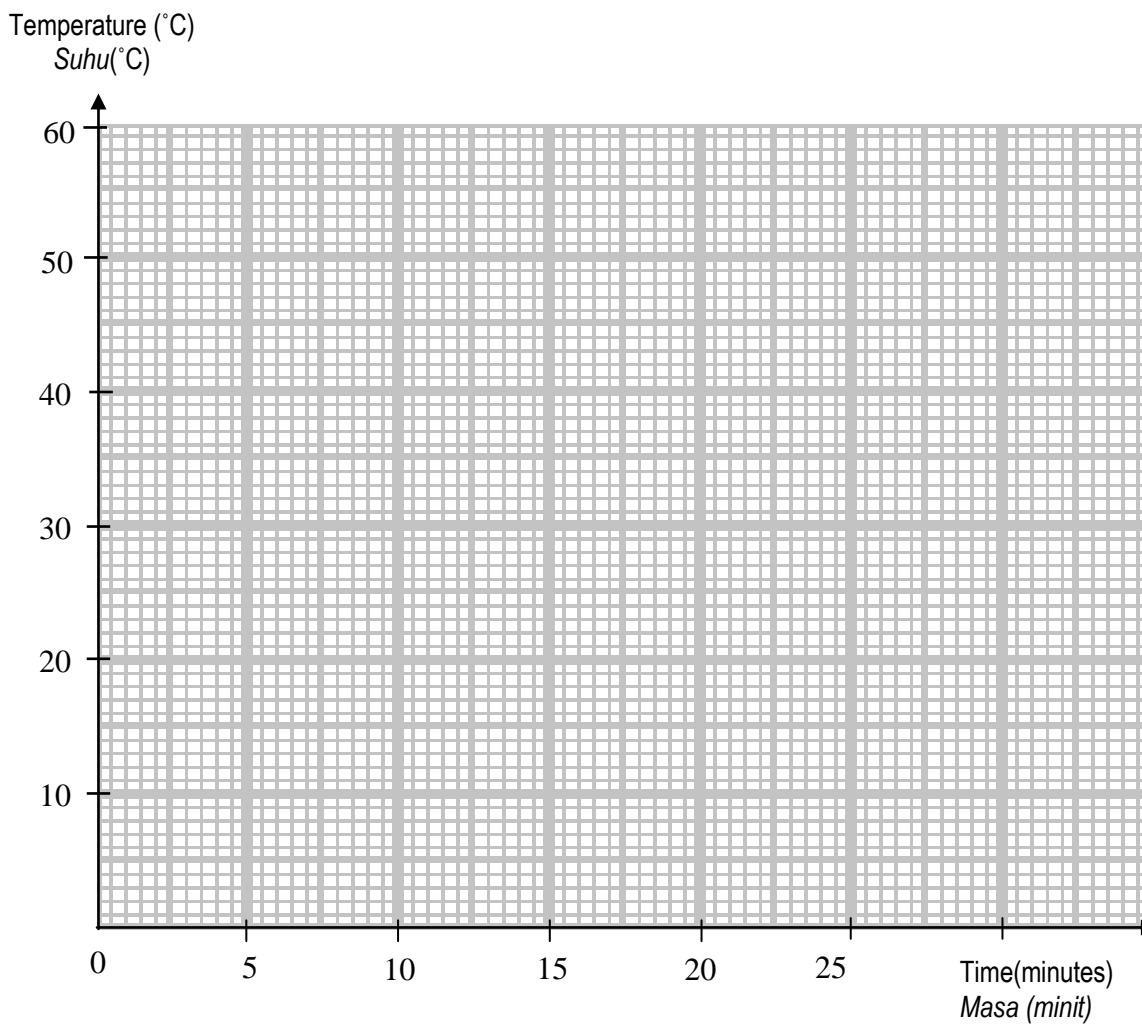
.....  
[1 mark]

- (g) State **one** application of heat transfer by radiation in daily life.  
*Nyatakan **satu** aplikasinya pemindahan haba secara radiasi dalam kehidupan harian.*

.....  
[1 mark]

- (h) Based on table, plot a graph to show the relationship between time and temperature for beaker A and B.  
*Berdasarkan kepada jadual, plotkan graf bagi menunjukkan hubungan antara masa dan suhu bagi bikar A dan B.*

Beaker A <i>Bikar A</i>		Beaker B <i>Bikar B</i>	
Time(minutes) <i>Masa (minit)</i>	Temperature (°C) <i>Suhu(°C)</i>	Time(minutes) <i>Masa (minit)</i>	Temperature (°C) <i>Suhu(°C)</i>
0	60	0	60
5	55	5	58
10	50	10	56
15	45	15	54
20	40	20	52



[2 marks]

/10
-----

**END OF QUESTION PAPER**



## INFORMATION FOR CANDIDATES

1. *This question paper consists of **two** sections: **Section A** and **Section B**.*
2. *Write your answer in the space provided in the question paper.*
3. *Show your working, it may help you to get marks.*
4. *If you wish to cancel any answer, neatly cross out the answer.*
5. *The diagrams in the questions provided are not drawn to scale unless stated.*
6. *Marks allocated for each question or part question are shown in brackets.*
7. *The time suggested to answer **Section A** is 60 minutes and **Section B** is 30 minutes.*
8. *You may use a non-programmable scientific calculator.*
9. *Hand in this question paper at the end of the examination.*

## MAKLUMAT UNTUK CALON

1. *Kertas soalan ini mengandungi dua bahagian: **Bahagian A** dan **Bahagian B**.*
2. *Tulis jawapan anda dalam ruang yang disediakan dalam kertas soalan.*
3. *Tunjukkan kerja kira mengira, ini membantu anda mendapatkan markah.*
4. *Sekiranya anda hendak membatalkan sesuatu jawapan, buat garisan di atas jawapan itu.*
5. *Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.*
6. *Markah yang diperuntukkan bagi setiap soalan atau ceraiian soalan ditunjukkan dalam kurungan.*
7. *Masa yang dicadangkan untuk menjawab **Bahagian A** ialah 60 minit dan **Bahagian B** ialah 30 minit.*
8. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.*
9. *Serahkan kertas soalan ini diakhir peperiksaan.*

**Skema Pemarkahan Percubaan Penilaian Menengah Rendah (PMR) 2010**  
**Sains - K 1**

<b>Nombor Soalan</b>	<b>Jawapan</b>
1	B
2	C
3	B
4	A
5	B
6	D
7	D
8	C
9	D
10	D
11	A
12	A
13	A
14	C
15	C
16	B
17	B
18	A
19	B
20	D
21	B
22	C
23	D
24	A
25	A
26	B
27	C
28	C
29	D
30	B
31	A
32	B
33	D
34	A
35	C
36	D
37	C
38	D
39	B
40	C

SUGGESTED ANSWERS – Science PMR Paper 2 2010

- |         |   |                |
|---------|---|----------------|
| 1. a)   | P = Measuring cylinder<br>Q = Triple beam balance<br>R = Spring balance   | 3 marks        |
| b)      | P = Measure the volume of a liquid.<br>Q = Measure the mass of an object.<br>R = Measure the weight of an object. | 2 marks        |
| c)      | Lever balance / Butchard balance.   | 1 mark         |
|         | <b>TOTAL</b>  | <b>6 MARKS</b> |
| 2. a)   | J : Element<br>K : Mixture  | 2 marks        |
| b) i)   | Water   | 1 mark         |
| ii)     | two / more different types of molecules combined chemically   | 1 mark         |
| iii)    | (Water) Electrolysis  | 1 mark         |
| c)      | Q → P → S → R   | 1 mark         |
|         | <b>TOTAL</b>  | <b>6 MARKS</b> |
| 3.      |   |                |
| a)      | dilute (sulphuric) acid   | 1 mark         |
| b)      | X   | 1 mark         |
| c)      | ( i ) P - oxygen    Q - hydrogen<br>(ii) use glowing splinter<br>(iii) use burning splinter                       | 3 marks        |
| d)      | 2 : 1   | 1 mark         |
|         | <b>TOTAL</b>  | <b>6 MARKS</b> |
| 4       |   |                |
| (a) (i) | Insecticide sprayer   | 1 mark         |
| (ii)    | To spray out the insecticide(in fine droplets)  | 1 mark         |
| (b) (i) | The air pressure in the cylinder increases.   | 1 mark         |
| (ii)    | The volume of air inside the cylinder decreases,<br>Therefore increases the air pressure inside it                | 1 mark         |
| (c)     | The air pressure is lower / decreases   | 1 mark         |
| (d)     | The device will not function.   | 1 mark         |
|         | <b>TOTAL</b>  | <b>6 MARKS</b> |
| 5       |   |                |
| (a) (i) | Fertilisation   |                |
| (ii)    | Fallopian tube  | 2 marks        |
| (b) P : | sperm   |                |
| Q :     | ovum  | 2 marks        |
| (c) P : | testis/testes   |                |
| Q :     | ovary   | 2 marks        |

- (d) Zygote 1 mark  
 (e) It will die 1 mark  
**TOTAL 8 MARKS**

- 6 a) (i) Increase the voltage  
 (ii) use the step-down transformer  
 (iii) 240V 3 marks

- b) (i) because the number of secondary coils is more than the number of primary coils  
 (ii) by adding more coils at Y so the voltage produced is higher 2 marks

- c) (i) In Diagram 6.3a the number of turns of secondary coils is less than the primary coil while in Diagram 6.3 b the number of turns of secondary coils is more than the primary coils.  
 (ii) Bulb M2 in Diagram 6.3a is less bright but bulb M2 in Diagram 6.3b is brighter 3 marks  
**TOTAL 8 MARKS**

- 7 (a) (i) P: Buttress root  
 Q: Tendril  
 R: Thorns  
 S: prop root 4 marks

- |   |   |  |
|---|---|--|
| (b) Group 1: Supported by buttress root | Group 2: Not supported by buttress root |  |
| Plant: Casuarina (P)                    | Bitter gourd (Q)                        |  |
|   | Rose (R)                                |  |
|   | Maize (S)                               |  |
|   |   |  |
| Supported by tendril                    | Not supported by tendril                |  |
| Bitter gourd                            | Casuarina                               |  |
|   | Rose                                    |  |
|   | Maize                                   |  |
|   |   |  |
| Supported by thorn                      | Not supported by thorn                  |  |
| Rose                                    | Bitter gourd                            |  |
|   | Maize                                   |  |
|   | Casuarina                               |  |
|   |   |  |
| Supported by prop root                  | Not supported by prop root              |  |
| Maize                                   | Bitter gourd                            |  |
|   | Casuarina                               |  |
|   | Rose                                    |  |

4 marks

