

SULIT

55/1

55/1  
Sains  
Kertas 1  
Ogos  
2010  
1 jam



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

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**PEPERIKSAAN PERCUBAAN  
PENILAIAN MENENGAH RENDAH 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, Bahasa Inggeris dan Bahasa Melayu .*
2. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

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Kertas soalan ini mengandungi 25 halaman bercetak

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- 1 Diagram 1 shows a measurement of the diameter of a boiling tube.  
*Rajah 1 menunjukkan ukuran diameter satu tabung didih.*

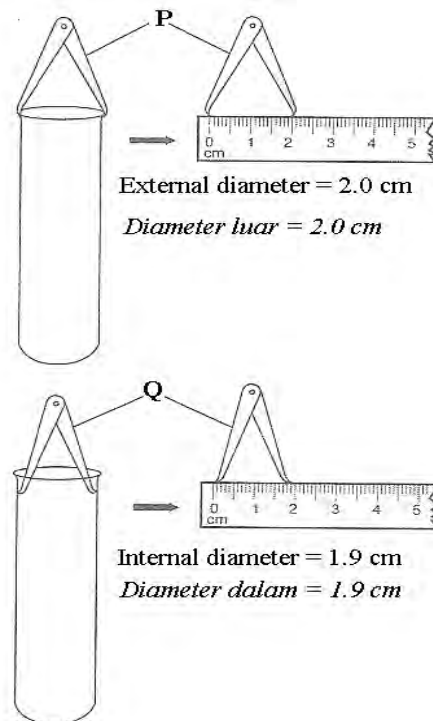


Diagram 1  
*Rajah 1*

Calculate the thickness of the boiling tube's wall.  
*Kira ketebalan dinding tabung didih itu.*

- A 0.50 cm  
B 0.25 cm  
C 0.10 cm  
D 0.05 cm
- 2 Diagram 2 shows a type of cell in the human body.  
*Rajah 2 menunjukkan sejenis sel dalam badan manusia.*



Diagram 2  
*Rajah 2*

Which of the following is the function of the cell?  
 Antara berikut, yang manakah merupakan fungsi sel itu?

- A Protects the body against infections  
*Melindungi badan daripada jangkitan*
- B Involves in blood clotting to stop bleeding  
*Terlibat dalam pembekuan darah untuk menghentikan luka*
- C Transports oxygen to all parts of the body  
*Mengangkut oksigen ke seluruh bahagian badan*
- D Contracts and relaxes to enable movement of body parts.  
*Mengecut dan mengendur untuk membolehkan pergerakan anggota badan*

3 The density of iron is  $7.9 \text{ g/cm}^3$ . What is the mass of  $20 \text{ cm}^3$  of iron?  
 Ketumpatan besi adalah  $7.9 \text{ g/cm}^3$ . Apakah jisim bagi  $20 \text{ cm}^3$  besi?

- A 99 g
- B 158 g
- C 170 g
- D 198 g

4 Diagram 3 shows an experimental set-up.  
 Rajah 3 menunjukkan satu susunan eksperimen.

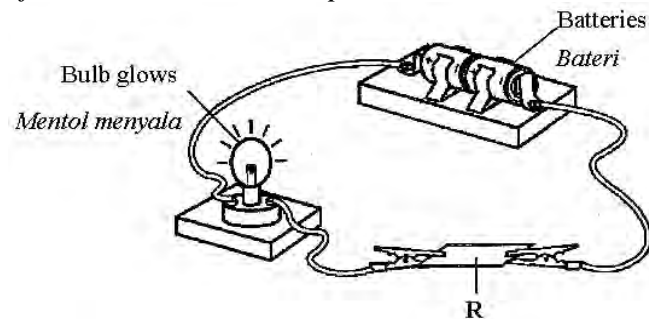


Diagram 3  
 Rajah 3

Which of the following properties is **correct** about **R**?  
 Antara ciri-ciri berikut, yang manakah **benar** tentang **R**?

- A **R** has dull surfaces.  
***R** mempunyai permukaan yang pudar*
- B **R** cannot be reshaped  
***R** tidak boleh dibentuk semula*
- C **R** is poor conductor of heat  
***R** adalah konduktor haba yang lemah*
- D **R** has very high melting point  
***R** mempunyai takat lebur yang sangat tinggi*

- 5 Diagram 4 shows an experiment.  
Rajah 4 menunjukkan satu eksperimen.

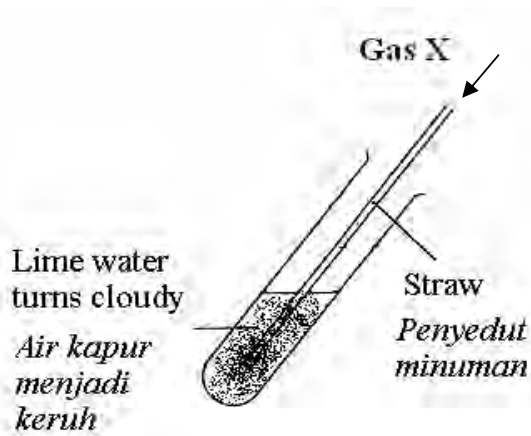


Diagram 4  
Rajah 4

Which of the following statements is **correct** about gas **X**?  
Antara pernyataan berikut, yang manakah **benar** tentang gas **X**?

- A It is odourless but with colour  
*Ia tidak berbau tetapi berwarna*
- B It is not soluble in sodium hydroxide solution  
*Ia tidak larut dalam larutan natrium hidroksida*
- C It has neutral properties towards moist litmus paper  
*Ia bersifat neutral terhadap kertas litmus yang lembap*
- D It turns hydrogen carbonate indicator from red to yellow  
*Ia menukarkan warna penunjuk hidrogen karbonat daripada merah kepada kuning*

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**6** Diagram 5 shows a pie chart which represents the composition of gases **P**, **Q**, **R** and **S** in the air.

*Rajah 5 menunjukkan satu carta pai yang mewakili komposisi gas **P**, **Q**, **R** dan **S** di dalam udara.*

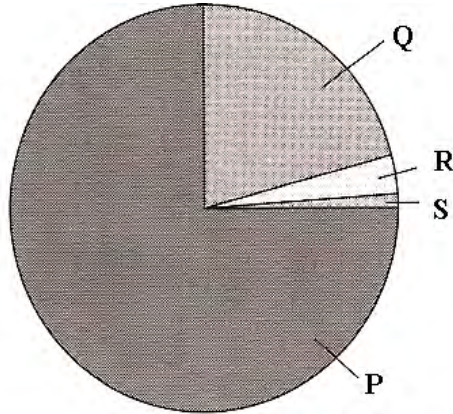


Diagram 5  
*Rajah 5*

Which gas is needed for combustion?

*Gas yang manakah diperlukan untuk pembakaran?*

- A** P
- B** Q
- C** R
- D** S

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- 7 Diagram 6 shows a ball which is thrown into the net.  
*Rajah 6 menunjukkan sebiji bola dilontarkan ke dalam jaring.*

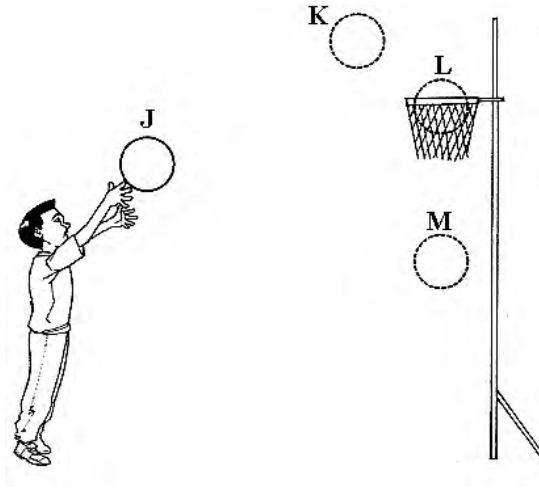


Diagram 6  
*Rajah 6*

At which position does the ball possess the maximum potential energy?  
*Di kedudukan manakah bola itu mempunyai tenaga keupayaan maksimum?*

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

- 8 Diagram 7 shows two copper blocks of different sizes are put into boiling water for 30 minutes. The copper blocks are then transferred into two beakers, beaker **P** and **Q**, each containing the same volume of water.

*Rajah 7 menunjukkan dua blok kuprum yang berlainan saiz dimasukkan ke dalam air yang mendidih selama 30 minit. Blok kuprum itu kemudian dipindahkan ke dalam dua bikar, P dan Q. Setiap bikar mengandungi isipadu air yang sama.*

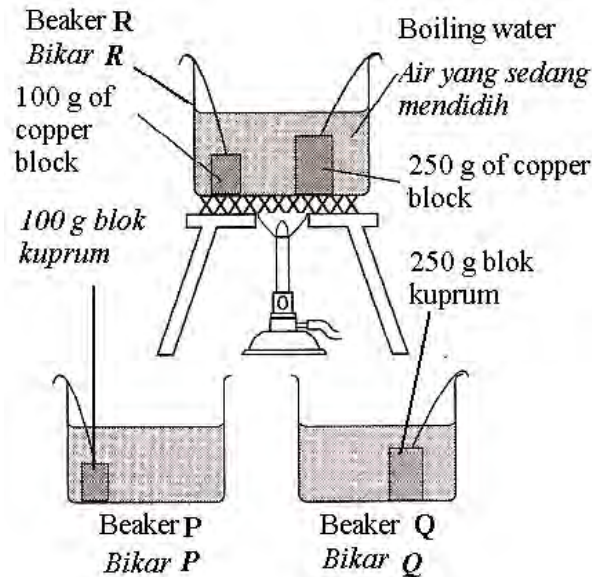


Diagram 7  
Rajah 7

Which of the following are the variables in the experiment?

*Antara yang berikut, yang manakah pemboleh ubah dalam eksperimen ini?*

	<b>Manipulated variable</b> <i>Pemboleh ubah yang dimanipulasikan</i>	<b>Responding variable</b> <i>Pemboleh ubah yang bergerakbalas</i>
<b>A</b>	Mass of copper block <i>Jisim blok kuprum</i>	Water temperature in beaker <b>P</b> and beaker <b>Q</b> <i>Suhu air dalam bikar P dan bikar Q</i>
<b>B</b>	Mass of copper block <i>Jisim blok kuprum</i>	Water temperature in beaker <b>R</b> <i>Suhu air dalam bikar R</i>
<b>C</b>	Volume of water in beaker <b>R</b> <i>Isipadu air dalam bikar R</i>	Water temperature in beaker <b>R</b> <i>Suhu air dalam bikar R</i>
<b>D</b>	Volume of water in beaker <b>P</b> and beaker <b>Q</b> <i>Isipadu air dalam bikar P dan bikar Q</i>	Water temperature in beaker <b>P</b> and beaker <b>Q</b> <i>Suhu air dalam bikar P dan bikar Q</i>

- 9 Which of the following is **correct** about dull dark surface and white shiny surface?  
*Antara berikut, yang manakah betul tentang permukaan gelap yang pudar dan permukaan putih berkilat?*

	<b>Dark and dull surface</b> <i>Permukaan gelap dan pudar</i>	<b>White and shiny surface</b> <i>Permukaan putih dan berkilat</i>
<b>A</b>	Good reflector of heat <i>Pemantul haba yang baik</i>	Good absorber of heat <i>Penyerap haba yang baik</i>
<b>B</b>	Good absorber of heat <i>Penyerap haba yang baik</i>	Good radiator of heat <i>Penyinar haba yang baik</i>
<b>C</b>	Good reflector of heat <i>Pemantul haba yang baik</i>	Good radiator of heat <i>Penyinar haba yang baik</i>
<b>D</b>	Good absorber of heat <i>Penyerap haba yang baik</i>	Good reflector of heat <i>Pemantul haba yang baik</i>

- 10 Which of the following will happen when a substance cools down?  
*Antara berikut yang manakah akan berlaku apabila suatu bahan disejukkan?*

- A** Heat energy is reversed  
*Tenaga haba diterbalikkan*
- B** Heat energy is released  
*Tenaga haba dibebaskan*
- C** Heat energy is absorbed  
*Tenaga haba diserap*
- D** The particles move further apart  
*Zarah-zarah bergerak lebih jauh antara satu sama lain*

- 11 Diagram 8 shows two types of eye defects and their correction.  
*Rajah 8 menunjukkan dua jenis kecacatan mata dan cara pembetulannya.*

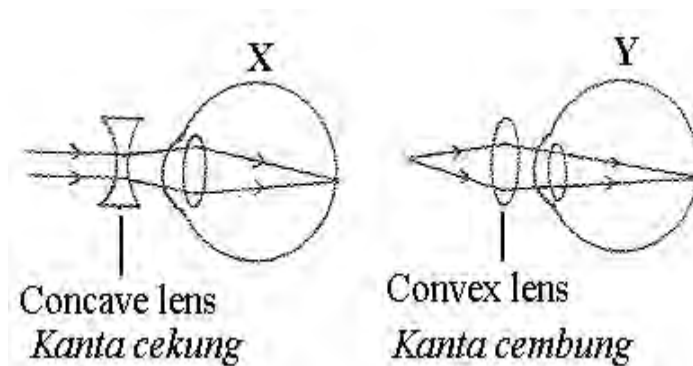


Diagram 8  
*Rajah 8*

What type of eye defects are represented by **X** and **Y**?  
*Apakah jenis kecacatan mata yang diwakili oleh X dan Y?*

	<b>X</b>	<b>Y</b>
<b>A</b>	Short-sightedness <i>Rabun jauh</i>	Long-sightedness <i>Rabun dekat</i>
<b>B</b>	Astigmatism <i>Astigmatisme</i>	Long-sightedness <i>Rabun dekat</i>
<b>C</b>	Long-sightedness <i>Rabun dekat</i>	Short-sightedness <i>Rabun jauh</i>
<b>D</b>	Short-sightedness <i>Rabun jauh</i>	Astigmatism <i>Astigmatisme</i>

- 12 Diagram 9 shows organs in the human digestive system.  
*Rajah 9 menunjukkan organ dalam sistem pencernaan manusia.*

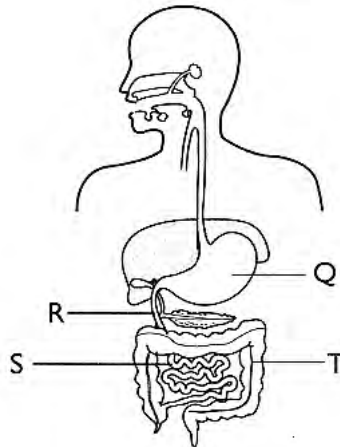


Diagram 9  
*Rajah 9*

The reabsorption of water from undigested food occurs in the part which is labeled  
*Penyerapan semula air daripada makanan yang tidak tercerna berlaku dalam bahagian yang dilabelkan*

- A Q
- B R
- C S
- D T

- 13 Diagram 10 shows a graph of body temperature versus surrounding temperature for an animal.  
*Rajah 10 menunjukkan graf suhu badan melawan suhu persekitaran bagi suatu haiwan.*

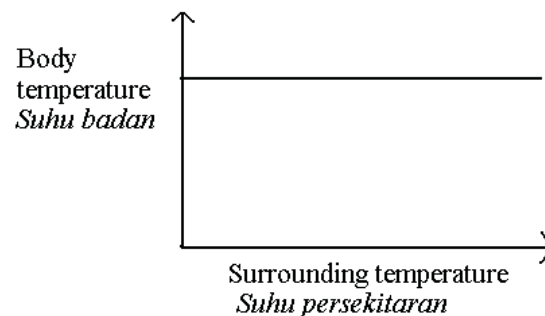


Diagram 10  
*Rajah 10*

Among the following, which is the animal?  
*Antara berikut, yang manakah haiwan itu?*

- A Eel  
*Belut*
- B Bat  
*Kelawar*
- C Toad  
*Kodok*
- D Monitor lizard  
*Biawak*

- 14 The remora fish lives by attaching itself under a shark and eating the scraps of food left by the shark. This interaction is known as  
*Ikan remora hidup di bawah ikan jerung dan memakan sisa makanan yang ditinggalkan oleh ikan jerung. Interaksi ini dikenali sebagai*

- A Mutualism  
*Mutualisme*
- B Competition  
*Persaingan*
- C Prey-predator  
*Mangsa-pemangsa*
- D Commensalism  
*Komensalisme*

- 15 Diagram 11 shows the process of electrolysis of water.  
*Rajah 11 menunjukkan satu proses elektrolisis air.*

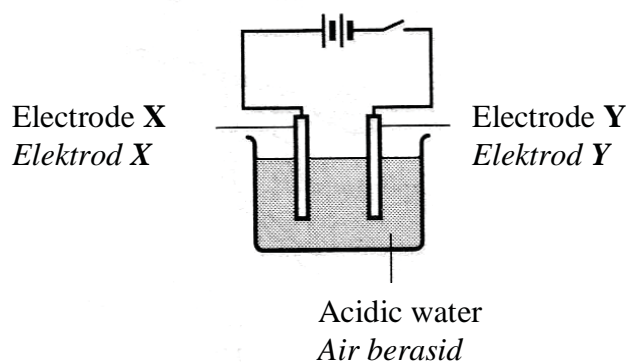


Diagram 11  
*Rajah 11*

Which of the following occurs when the switch is turned on?

*Antara berikut, yang manakah akan berlaku apabila suis dihidupkan?*

- A** Oxygen is collected at electrode **Y**  
*Oksigen terkumpul di elektrod Y*
- B** Hydrogen is collected at electrode **X**  
*Hidrogen terkumpul di elektrod X*
- C** No gas is released at both electrodes **X** and **Y**  
*Tiada gas dibebaskan di kedua-dua elektrod X dan Y*
- D** Hydrogen is collected at the negative electrode and oxygen is collected at the positive electrode  
*Hidrogen terkumpul di elektrod negative dan oksigen terkumpul di elektrod positif*

- 16** Diagram 12 shows two wet towels of the same size, **P** and **Q** hung on a clothes line.  
*Rajah 12 menunjukkan dua helai tuala lembab P dan Q yang sama saiz disidai di ampaiian kain.*

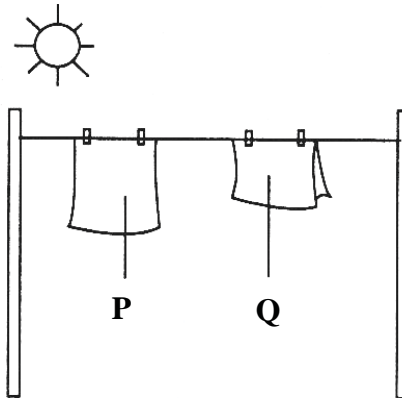


Diagram 12  
*Rajah 12*

**P** dries up faster than **Q**. What is the factor that causes **P** to dry faster?

*P kering dengan lebih cepat berbanding Q. Apakah faktor yang menyebabkan P kering lebih cepat?*

- A** Surface area  
*Luas permukaan*
- B** Movement of air  
*Pergerakan udara*
- C** Surrounding humidity  
*Kelembapan persekitaran*
- D** Surrounding temperature  
*Suhu persekitaran*

- 17 The information below shows three characteristics of one water purification method.  
*Maklumat di bawah menunjukkan tiga ciri bagi satu kaedah pembersihan air.*

- Kills microorganisms  
*Membunuh mikroorganisma*
- Does not get rid of impurities  
*Tidak memyingkirkan bahan terampai*
- Sometimes endangers health  
*Kadang-kala membahayakan kesihatan*

This method is most probably  
*Kaedah ini kemungkinan adalah*

- A Boiling  
*Pendidihan*
- B Filtration  
*Penurasan*
- C Distillation  
*Penyulingan*
- D Chlorination  
*Pengklorinan*
- 18 Condensed milk can be poured more easily from the milk tin if the tin has two punctured holes as shown in diagram 13.  
*Susu sejat mudah dituang dari tin susu jika tin tersebut mempunyai dua lubang seperti yang ditunjukkan dalam rajah 13.*

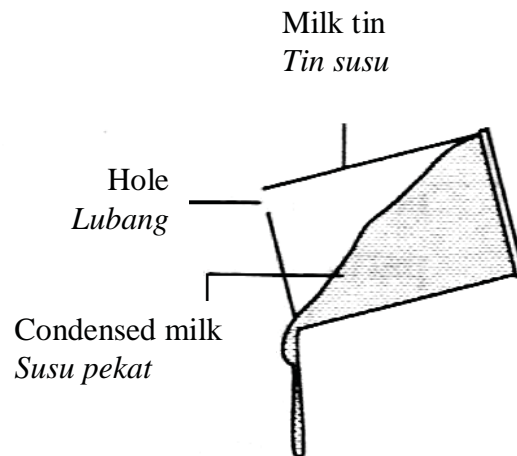


Diagram 13  
*Rajah 13*

This is because the  
*Ini adalah kerana*

- A air can go into the milk tin  
*udara boleh masuk ke dalam tin susu*
- B air can dilute the condensed milk  
*udara boleh mencairkan susu sejat*
- C outside air enter the milk tin and pushes out the milk  
*udara luar masuk ke dalam tin susu dan menolak susu keluar*
- D air pressure outside the milk tin is lower than air pressure inside the milk tin  
*tekanan udara di luar tin susu lebih rendah berbanding tekanan udara di dalam tin susu*

- 19 Diagram 14 shows that the length of the spring is 10 cm before it is being pulled. When the spring is pulled, its length becomes 22 cm.

*Rajah 14 menunjukkan panjang satu spring adalah 10 cm sebelum ditarik. Apabila spring tersebut ditarik panjangnya menjadi 22 cm.*

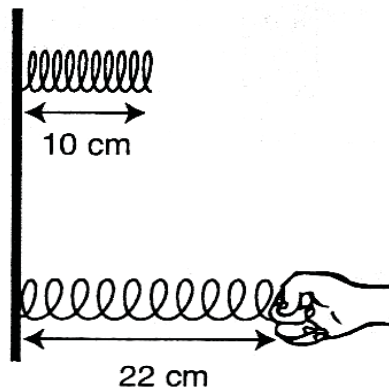


Diagram 14  
*Rajah 14*

If the work done is 30 J, how much force is acting on the spring?

*Jika kerja yang dilakukan adalah 30 J, berapakah nilai daya yang bertindak ke atas spring tersebut?*

- A 150 N
- B 200 N
- C 250 N
- D 275 N

**20** In which of the following surfaces will the frictional force be greatest?  
*Antara permukaan berikut, yang manakah mempunyai daya geseran yang paling besar?*

- A** A wet surface  
*Satu permukaan yang lembab*
- B** A surface with oil on it  
*Satu permukaan dengan minyak di atasnya*
- C** A smooth polished surface  
*Satu permukaan yang digilap licin*
- D** A surface with sandpaper on it  
*Satu permukaan dengan kertas pasir di atasnya*

**21** Diagram 15 shows a pumpkin plant.  
*Rajah 15 menunjukkan satu pokok labu.*



Diagram 15  
*Rajah 15*

Which of the following has the same support system with pumpkin plant?  
*Manakah di antara berikut mempunyai sistem sokongan yang sama dengan pokok labu?*

- A** Roses  
*Pokok ros*
- B** Orchid  
*Pokok orkid*
- C** Cucumber plant  
*Pokok timun*
- D** Money plant  
*Pokok duit-duit*

- 22 Diagram 16 shows a lever system in a balanced position.  
*Rajah 16 menunjukkan satu sistem tuas yang berada dalam keadaan yang seimbang.*

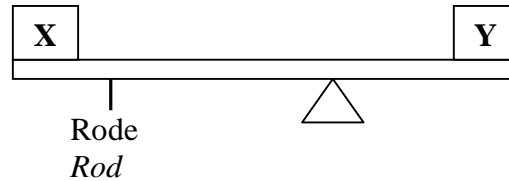


Diagram 16

*Rajah 16*

Which of the statements below is **correctly** describing the system?  
*Penyataan yang manakah di bawah ini menerangkan dengan betul tentang sistem tersebut?*

- A X is as heavy as Y  
*X sama berat dengan Y*
  - B X is lighter than Y  
*X lebih ringan daripada Y*
  - C X is lighter than the rode  
*X lebih ringan daripada rod*
  - D X is heavier than Y  
*X lebih berat daripada Y*
- 23 Which of the following situations shows that the stability increases?  
*Situasi yang manakah menunjukkan kestabilan meningkat?*
- A Lean body on a wall.  
*Menyandar badan pada dinding.*
  - B Shorten a chair's legs.  
*Memendekkan kaki kerusi.*
  - C Build a racing car's body from fibre glass  
*Membina badan kereta lumba daripada gentian kaca.*
  - D Bend body slightly forward when lifting heavy object.  
*Membongkokkan badan sedikit ke hadapan semasa mengangkat objek berat.*

- 24 Diagram 17 shows three devices with different levers.  
*Rajah 17 menunjukkan tiga alat dengan tuas yang berbeza.*



Diagram 17  
*Rajah 17*

All above levers are classified based on  
*Semua tuas di atas dikelaskan berdasarkan*

- A The uses of the lever  
*Kegunaan tuas tersebut*
  - B The material of the lever  
*Bahan tuas tersebut*
  - C The position of effort, fulcrum and load  
*Kedudukan daya, fulkrum dan beban*
  - D The distant between effort, fulcrum and load  
*Jarak di antara daya, fulkrum dan beban*
- 25 The statement below describes one of harmful substances that can be found in cigarette smoke.  
*Penyataan di bawah menerangkan salah satu bahan berbahaya yang boleh dijumpai di dalam asap rokok.*

Substance **X** causes lots of smokers hard to stop smoking.  
*Bahan **X** menyebabkan ramai perokok tidak boleh berhenti merokok.*

Substance **X** refer to  
*Bahan **X** merujuk kepada*

- A Tar  
*Tar*
- B Nicotine  
*Nikotin*
- C Carcinogens  
*Karsinogen*
- D Carbon monoxide  
*Karbon monoksida*

- 26 Diagram 18 shows the cross section of two blood vessels.  
Rajah 18 menunjukkan keratan rentas dua salur darah.

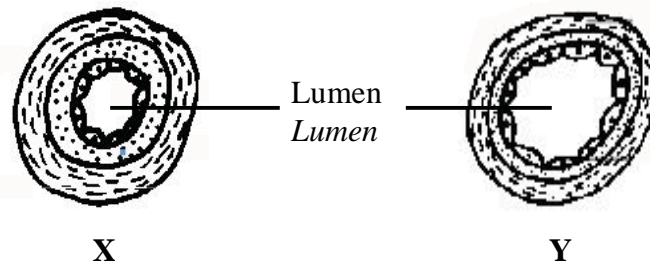


Diagram 18  
Rajah 18

Which of the following is **true** about **X**?  
Manakah di antara berikut **benar** mengenai **X**?

- A Contains low blood pressure  
*Mengandungi darah bertekanan rendah*
  - B Carries deoxygenated blood.  
*Membawa darah tidak beroksigen*
  - C Carries oxygenated blood  
*Membawa darah beroksigen*
  - D Carries blood into the heart  
*Membawa darah ke dalam jantung*
- 27 The following information shows the steps **W**, **X** and **Y**, involved in dialysis.  
*W, X dan Y adalah langkah-langkah yang terlibat dalam proses dialisis.*

<b>W</b>	: The filtered blood flows back into a vein of the patient. <i>Darah yang ditapis mengalir semula ke dalam vena pesakit</i>
<b>X</b>	: Waste products diffuse out of the blood into the salt solution through the pores of the tubes. <i>Bahan buangan meresap keluar dari darah ke dalam larutan garam melalui liang-liang pada salur</i>
<b>Y</b>	: Blood from patient flows into tubes which are immersed in a salt solution in a dialysis machine. <i>Darah dari pesakit mengalir ke dalam salur yang direndam dalam suatu larutan garam dalam sebuah mesin dialisis.</i>

Which of the following is the correct sequence for the process of dialysis?  
*Antara yang berikut, manakah urutan yang betul bagi proses dialisis itu?*

- A W → X → Y
- B X → W → Y
- C Y → X → W
- D Y → W → X

28 Which of the following organisms conducts external fertilisation?  
*Antara yang berikut, manakah organisma yang menjalankan persenyawaan luaran?*

A



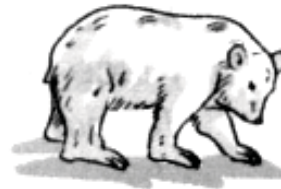
C



B



D



29 Diagram 19 shows a foetus growing inside the uterus.  
*Rajah 19 menunjukkan fetus yang membesar dalam uterus.*

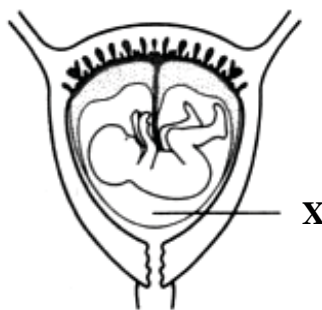


Diagram 19  
*Rajah 19*

The function of the part labelled **X** is  
*Fungsi bahagian berlabel X ialah*

- A** To constantly turn the foetus  
*Untuk memusingkan fetus secara berterusan*
- B** To send nutrients to the foetus  
*Untuk menghantar nutrien kepada fetus*
- C** To protect the foetus from shocks  
*Untuk melindungi fetus daripada hentakan*
- D** To diffuse oxygen from the placenta to the foetus  
*Untuk menyerap oksigen dari plasenta ke fetus*

- 30** Diagram 20 shows the structure of a flower.  
*Rajah 20 menunjukkan struktur sekuntum bunga.*

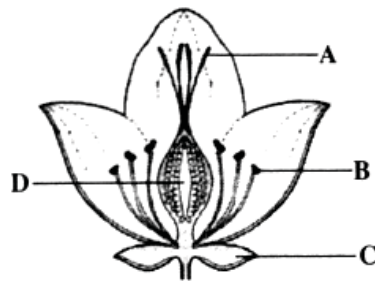


Diagram 20  
*Rajah 20*

At which part **A**, **B**, **C** or **D**, does pollen grains land on the flower during pollination?  
*Antara bahagian A, B, C atau D, di manakah butir debunga jatuh semasa proses pendebungaan?*

- 31** Diagram 21 shows the structure **P** germinated in the style of a flower.  
*Rajah 21 menunjukkan struktur P bercambah di dalam stil bunga.*

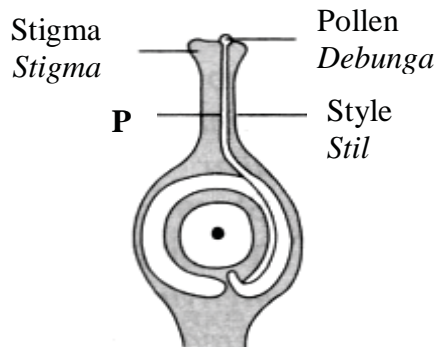


Diagram 21  
*Rajah 21*

The function of **P** is  
*Fungsi P ialah*

- A** To transfer food to the ovule.  
*Untuk menghantar makanan kepada ovul.*
- B** To protect the style of the flower.  
*Untuk melindungi stil bunga.*
- C** To transfer the male gametes to ovule.  
*Untuk menghantar gamet jantan kepada ovul.*
- D** To help the ovary to absorb sugary liquid on the stigma.  
*Untuk membantu ovari menyerap cecair melekit di atas stigma.*

- 32** The information below describes the methods of reproduction for plant Z.  
*Maklumat di bawah menerangkan kaedah pembiakan untuk tumbuhan Z.*

- Reproduce through seeds  
*Membiaik melalui biji benih*
- Vegetative part : runners  
*Bahagian vegetatif : batang rayap*

What is plant **Z**?  
*Apakah tumbuhan Z?*

- A** A potato plant  
*Pokok kentang*
- B** A banana plant  
*Pokok pisang*
- C** A rambutan tree  
*Pokok rambutan*
- D** A strawberry plant  
*Pokok strawberi*

- 33** Table 1 shows the growth of human at different stages **P**, **Q**, **R**, **S** and **T** according to their age.  
*Jadual 1 menunjukkan pertumbuhan manusia pada peringkat yang berbeza P, Q, R, S dan T mengikut umur.*

Stage <i>Peringkat</i>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>
Age/ years <i>Umur/ tahun</i>	0 - 3	4 - 11	12 - 17	18 - 65	66 and above <i>66 ke atas</i>

Table 1  
*Jadual 1*

Which stage shows the period of rapid growth?

*Peringkat yang manakah menunjukkan pertumbuhan yang cepat?*

- A P and Q  
*P dan Q*
- B R and S  
*R dan S*
- C P and R  
*P dan R*
- D R and T  
*R dan T*

34 Three compasses are placed near a bar magnet as shown in diagram 22

*Tiga kompas diletakkan berdekatan satu magnet bar seperti yang ditunjukkan pada rajah 22*

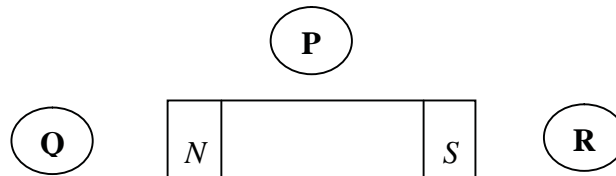


Diagram 22

*Rajah 22*

Which of the following shows the correct direction of the compasses P, Q and R?

*Antara yang berikut, yang manakah menunjukkan arah yang betul bagi kompas P, Q dan R?*

	P	Q	R
A	←	←	→
B	→	→	→
C	←	←	←
D	→	←	←

35 What does the label '13 A' on the fuse mean?

*Apakah yang dimaksudkan dengan label '13 A' pada fius?*

- A The fuse needs a current of 13 A to function.  
*Fius memerlukan arus sebanyak 13 A untuk berfungsi*
- B The fuse generates a maximum current of 13 A  
*Fius menghasilkan arus maksimum sebanyak 13 A*
- C The fuse allows a minimum current of 13 A to flow through it  
*Fius membenarkan arus minimum sebanyak 13 A melaluinya*
- D The fuse allows a maximum current of 13 A to flow through it  
*Fius membenarkan arus maksimum sebanyak 13 A melaluinya*

- 36** A lamp is labeled **240 V, 60 W** and a fan is labeled **240 V, 100 W**. Six lamps and two fans are used for 10 hours everyday.  
*Sebiji lampu dilabelkan 240 V, 60 W dan sebuah kipas dilabelkan 240 V, 100 W. Enam biji lampu dan dua buah kipas digunakan selama 10 jam setiap hari.*

The electrical tariff is as follows.

*Tarif tenaga elektrik adalah seperti berikut.*

First 100 units – 25 sen per unit  
*100 unit yang pertama – 25 sen per unit*  
 Additional units – 28 sen per unit  
*Unit tambahan – 28 sen per unit*

What is the cost of using the two appliances for 30 days?

*Berapakah kos penggunaan kedua-dua alat elektrik selama 30 hari?*

- A** RM 34.04  
**B** RM 38.64  
**C** RM 42.84  
**D** RM 44.04
- 37** Diego is an Eskimo living near the North Pole. One day he observes a dazzling display of light in the sky that lasts for several hours.  
*Diego seorang Eskimo yang tinggal berhampiran Kutub Utara. Suatu hari dia memerhatikan pemandangan cahaya berwarna-warni di langit untuk tempoh beberapa jam.*

What is this phenomenon called?

*Apakah nama fenomena tersebut?*

- A** Aurora  
*Aurora*  
**B** Sunspot  
*Tompok matahari*  
**C** Black hole  
*Lohong hitam*  
**D** Solar flare  
*Nyalaan suria*

**SULIT****55/1**

**38** What is formed when a medium-size star dies?  
*Apakah yang terbentuk apabila bintang bersaiz sederhana mati?*

- A** Nebula  
*Nebula*
- B** Black hole  
*Lohong hitam*
- C** Neutron star  
*Bintang neutron*
- D** White dwarf  
*Kerdil putih*

**39** Who was the first human in space?  
*Siapakah manusia pertama yang berada di angkasa lepas?*

- A** Yuri Gagarin
- B** Edwin Aldrin
- C** Michael Collins
- D** Neil Armstrong

**40** Diagram 23 shows a space probe.  
*Rajah 23 menunjukkan satu kuar angkasa.*

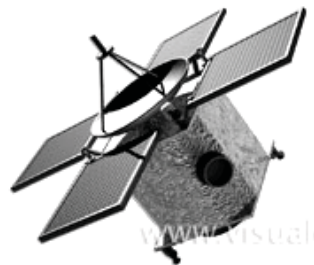


Diagram 23  
*Rajah 23*

A space probe is a spacecraft that  
*Kuar angkasa ialah kapal angkasa yang*

- A** can support life in space  
*dapat menyokong hidupan di angkasa*
- B** used to launch rockets into space  
*digunakan untuk melancarkan roket ke angkasa*
- C** gathers information and sends it back to Earth  
*mengumpul maklumat dan membawanya balik ke Bumi*
- D** gathers and records data about the Earth from a distance  
*mengumpul dan mencatat data tentang Bumi dari jauh*

**END OF QUESTION PAPER**

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT KEPADA CALON**

1. This question paper consists of **40** objective questions.  
*Kertas soalan ini mengandungi 40 soalan objektif.*
2. Answer **all** questions.  
Jawap 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.  
*Setiap soalan diikuti dengan 4 pilihan jawapan A, B, C atau D. Bagi setiap soalan, pilih satu jawapan sahaja. Hitamkan jawapan anda dalam kertas jawapan yang dibekalkan.*
4. If you wish to change your answer, erase the blackened mark that you have made. Then blacken the new answer.  
*Jika anda mahu menukar jawapan, padamkan tanda hitam yang anda buat. Kemudian hitamkan jawapan yang baru.*
5. The diagrams in the questions provided are not drawn to scale unless stated.  
*Rajah dalam soalan tidak dilukis mengikut skala kecuali dinyatakan.*
6. You may use a non-programmable scientific calculator.  
*Anda boleh menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*

**SULIT****55/2**NAMA PELAJAR 

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TINGKATAN 

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**55/2****Sains****Kertas 2****Ogos****2010****1 jam 30 minit**

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

**PEPERIKSAAN PERCUBAAN  
PENILAIAN MENENGAH RENDAH 2010**

**SAINS  
Kertas 2  
1 jam 30 minit**

**JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU**

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

<i>Untuk Kegunaan Pemeriksa</i>			
Kod Pemeriksa:			
Bahagian	Soalan	Markah Penuh	Markah Diperoleh
A	1	6	
	2	6	
	3	6	
	4	6	
	5	8	
	6	8	
B	7	8	
	8	12	
<b>JUMLAH</b>		<b>60</b>	

Kertas soalan ini mengandungi 20 halaman bercetak

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

[40 marks / 40 markah]

Answer **all** questions.  
Jawap **semua** soalan.

- 1** Diagram 1 shows a part of human digestive system.  
*Rajah 1 menunjukkan sebahagian daripada sistem pencernaan manusia.*

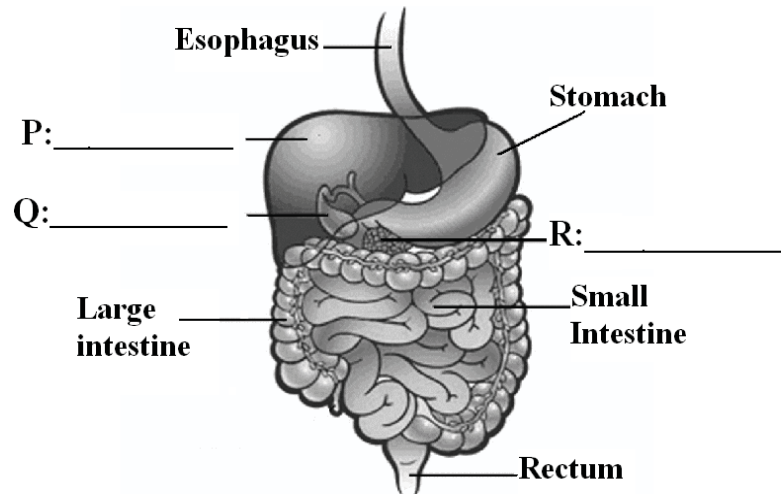


Diagram 1  
*Rajah 1*

- (a) On diagram 1, label part **P**, **Q** and **R** using the following words:  
*Pada rajah 1, labelkan bahagian P, Q dan R menggunakan perkataan berikut:*

Gall bladder	Liver	Pancreas
<i>Pundi hempedu</i>	<i>Hati</i>	<i>Pankreas</i>

[ 3 marks ]  
[ 3 markah ]

- (b) What is a function of organ **Q**?  
*Apakah fungsi organ Q?*

[ 1 mark ]  
[ 1 markah ]

**SULIT****55/2**

- (c) Which of the organ that produces gastric juice?  
*Organ manakah yang menghasilkan jus gastrik?*

---

[ 1 mark ]  
[ 1 markah ]

- (d) The pancreas produces enzymes. Name these enzymes.  
*Pankreas menghasilkan enzim. Namakan enzim-enzim tersebut.*

---

[ 1 mark ]  
[ 1 markah ]

- 2 Diagram 2 shows the effect of heat on the bimetallic strips.  
*Rajah 2 menunjukkan kesan haba terhadap dua jalur dwilogam.*

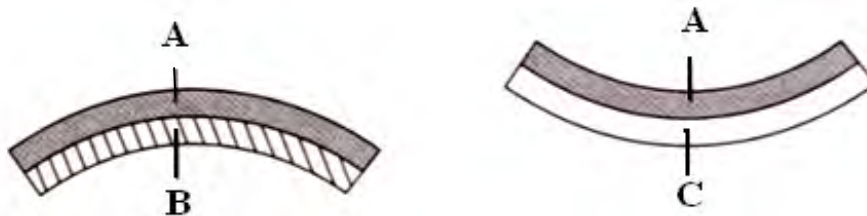


Diagram 2  
*Rajah 2*

- (a) (i) Which metal expands more when heated?  
*Logam manakah yang mengembang lebih banyak apabila dipanaskan?*

---

[ 1 mark ]  
[ 1 markah ]

- (ii) Arrange the metal according to its ability to expand in ascending order.  
*Susun kedudukan logam mengikut keupayaan untuk mengembang dalam urutan yang menaik.*

---

[ 1 mark ]  
[ 1 markah ]

**SULIT****55/2**

- (b) Bimetallic strips can be found in many instruments that are used in daily life. Name two of these instruments.

*Jalur dwilogam boleh didapati dikebanyakan peralatan yang digunakan dalam kehidupan seharian. Namakan dua daripada peralatan tersebut.*

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

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

[ 2 marks ]

[ 2 markah ]

- (c) (i) Name the liquid metal that is used in a thermometer.

*Namakan cecair logam yang digunakan dalam termometer.*

\_\_\_\_\_

[ 1 mark ]

[ 1 markah ]

- (ii) Why your answer in (c) (i) is suitable to use in the thermometer?

*Kenapa jawapan anda dalam (c) (i) sesuai digunakan dalam termometer?*

\_\_\_\_\_

[ 1 mark ]

[ 1 markah ]

- 3 Diagram 3 shows the position of two objects placed in two different glasses of water.  
Rajah 3 menunjukkan kedudukan dua objek di dalam dua gelas air yang berbeza.

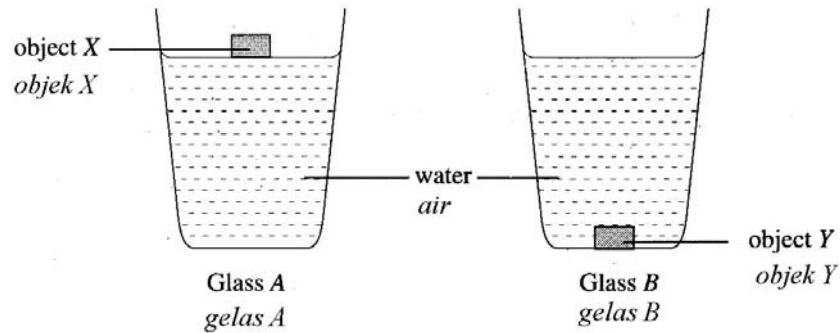


Diagram 3  
Rajah 3

- 3 (a) (i) Why does object **X** float on the surface of water?  
*Kenapa objek X terapung di atas permukaan air?*

[1 mark]  
[1 markah]

- (ii) Why does object **Y** sink in water?  
*Kenapa objek Y tenggelam di dalam air?*

[1 mark]  
[1 markah]

- (b) Give one example of object **X**.  
*Beri satu contoh objek X.*

[1 mark]  
[1 markah]

- (c) Predict what will be observed if object **Y** is replaced with a ping-pong ball?  
*Ramal apa yang akan diperhatikan jika objek Y diganti dengan sebiji bola ping-pong?*

[1 mark]  
[1 markah]

- (d) What conclusion can be made from the above experiment?  
*Apakah kesimpulan yang boleh dibuat dari eksperimen di atas?*

---



---



---

[2 marks]

[2 markah]

- 4 Diagram 4.1 shows a pair of scissors.  
*Rajah 4.1 menunjukkan sebilah gunting.*

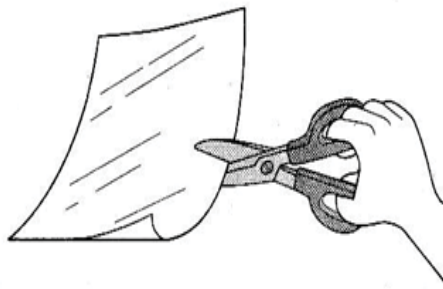


Diagram 4.1

*Rajah 4.1*

- (a) On diagram 4.1, label the positions of the fulcrum, load and effort.  
*Label kedudukan fulkrum, beban dan daya di atas rajah 4.1.*

[1 mark]

[1 markah]

- (b) (i) Based on diagram 4.1, state the class of lever of the scissors.  
*Berdasarkan rajah 4.1, nyatakan kelas tuas bagi gunting.*

[1 mark]

[ 1 markah]

- (ii) Give one reason for your answer in (b) (i).  
*Beri satu sebab untuk jawapan anda di (b) (i).*

[1 mark]

[1 markah]

**SULIT****55/2**

- (c) Based on diagram 4.2, choose one tool with the same class of lever as the scissors. Mark (✓) in the box of the tool.  
*Berdasarkan rajah 4.2, pilih satu peralatan yang sama kelas tuasnya dengan gunting. Tandakan (✓) di dalam kotak peralatan tersebut.*

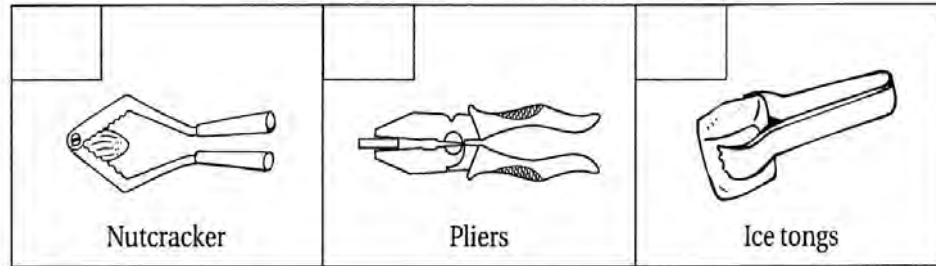


Diagram 4.2  
*Rajah 4.2*

[1 mark]  
 [ 1 markah]

- (d) Diagram 4.3 shows a lever that is in equilibrium.  
*Rajah 4.3 menunjukkan satu tuas yang berada dalam keseimbangan.*

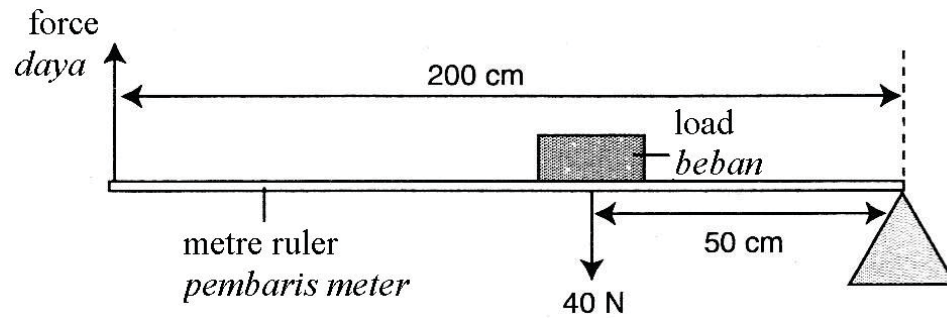


Diagram 4.3  
*Rajah 4.3*

Calculate the force, **W** needed to balance the metre ruler using the following formula:  
*Kira nilai daya, W yang diperlukan untuk mengimbangi pembaris meter menggunakan formula berikut:*

$$\text{Load} \times \text{distance of load from the fulcrum} = \text{force} \times \text{distance of force from the fulcrum}$$

$$\text{Beban} \times \text{jarak beban dari fulkrum} = \text{daya} \times \text{jarak daya dari fulkrum}$$

[2 marks]  
 [ 2 markah]

- 5 Diagram 5.1 shows a male reproductive system.  
Rajah 5.1 menunjukkan sistem pembiakan lelaki.

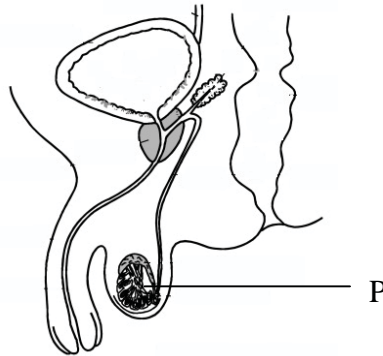


Diagram 5.1  
Rajah 5.1

- (a) Name the cell that produced by part **P**  
Namakan sel yang dihasilkan oleh bahagian **P**.

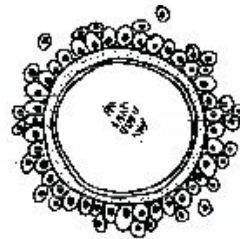
---

[1 mark]  
[1 markah]

- (b) Diagram 5.2 shows two different cells.  
Rajah 5.2 menunjukkan dua sel yang berbeza.



Cell X  
Sel X



Cell Y  
Sel Y

Diagram 5.2  
Rajah 5.2

- (i) Based on diagram 5.2, which cell carries female genetic information?  
Berdasarkan rajah 5.2, sel yang manakah membawa maklumat genetik perempuan?

---

[1 mark]  
[1 markah]

- (ii) Based on your observation on cell **X** and cell **Y**, state one physical difference between cell **X** and cell **Y**.

*Berdasarkan pemerhatian anda keatas sel X dan sel Y, nyatakan satu perbezaan fizikal di antara sel X dan sel Y.*

---

[1 mark]  
[1 markah]

- (iii) Name the parts in cell **X** that helps it to move.

*Namakan bahagian dalam sel X membantunya untuk bergerak.*

---

[1 mark]  
[1 markah]

- (c) Diagram 5.3 shows a process in female reproductive system.

*Rajah 5.3 menunjukkan satu proses dalam sistem pembiakan perempuan.*

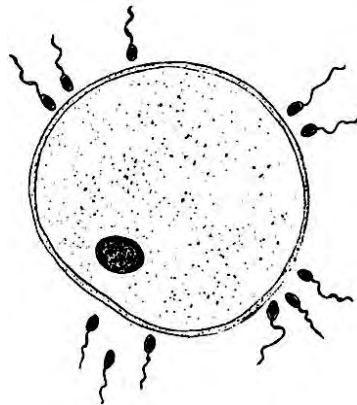


Diagram 5.3  
*Rajah 5.3*

Name the phase in menstrual cycle where the process above occur and give a reason for your answer.

*Namakan fasa dalam kitar haid di mana proses di atas berlaku dan berikan sebab untuk jawapan anda.*

---



---

[2 marks]  
[2 markah]

SULIT

55/2

- (d) Abdul and Atirah just got married. They do not want to have children until they are financially stable. Suggest two methods that they can use to plant their family.  
*Abdul dan Atirah baru berkahwin. Mereka tidak mahu memiliki anak sehingga kewangan mereka stabil. Cadangkan dua kaedah yang boleh mereka gunakan untuk merancang keluarga.*

1) \_\_\_\_\_

2) \_\_\_\_\_

[ 2 marks]

[2 markah]

- 6 Diagram 6.1 shows a 3-pin plug.  
*Rajah 6.1 menunjukkan satu plug 3-pin.*

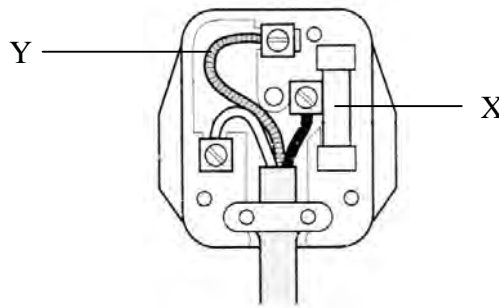


Diagram 6.1

*Rajah 6.1*

- (a) (i) What is the function of part X?  
*Apakah fungsi bahagian X?*

\_\_\_\_\_

[1 mark]

[1 markah]

- (ii) State the possible colours of cable Y.  
*Nyatakan warna-warna yang mungkin untuk kabel Y.*

\_\_\_\_\_

[1 mark]

[1 markah]

- (iii) Give one possible reason, why some electrical appliances such as printer and blender does not have cable **Y** in their plug.

*Berikan satu sebab yang mungkin, kenapa sesetengah peralatan elektrik seperti pencetak dan pengisar tidak mempunyai kabel Y di dalam plugnya.*

---

[1 mark]

[1 markah]

- (b) The information below shows a label on an oven.

*Maklumat di bawah menunjukkan satu label pada sebuah oven.*

Tobisha	Oven
Model No. TO2334ts	
240V ~ 1100 W	

From the information given, calculate the current passing through the oven when it is used.

*Daripada maklumat yang diberi, kirakan arus yang melalui oven tersebut apabila ianya digunakan.*

Power = Voltage X Current
---------------------------

<i>Kuasa = Voltan X Arus</i>
------------------------------

Current = \_\_\_\_\_ A

Arus = \_\_\_\_\_ A

[2 marks]

[2 markah]

- (c) Diagram 6.3 shows some electrical components.  
*Rajah 6.3 menunjukkan beberapa komponen elektrik.*



Diagram 6.3  
*Rajah 6.3*

Based on diagram 6.3, use their **symbols** to draw a simple circuit in the space provided below.

*Berdasarkan rajah 6.3, lukis satu litar ringkas menggunakan **simbol** di ruang yang disediakan di bawah.*

[3 marks]  
 [3 markah]

**Section B**  
**Bahagian B**

[20 marks / 20 markah]

Answer **all** questions.  
Jawap **semua** soalan

- 7 Diagram 7 shows four substances **P**, **Q**, **R** and **S**.  
Rajah 7 menunjukkan empat bahan, **P**, **Q**, **R** dan **S**.



Diagram 7  
Rajah 7

All the substances can be classified based on their reaction to the litmus paper.  
Kesemua bahan boleh diklasifikasikan berdasarkan tindak balas terhadap kertas litmus.

- (a) Based on diagram 7, state the colour change of the four substances when tested with **blue litmus paper**.  
Berdasarkan rajah 7, nyatakan perubahan warna keempat-empat bahan apabila diuji dengan **kertas litmus biru**.

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

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

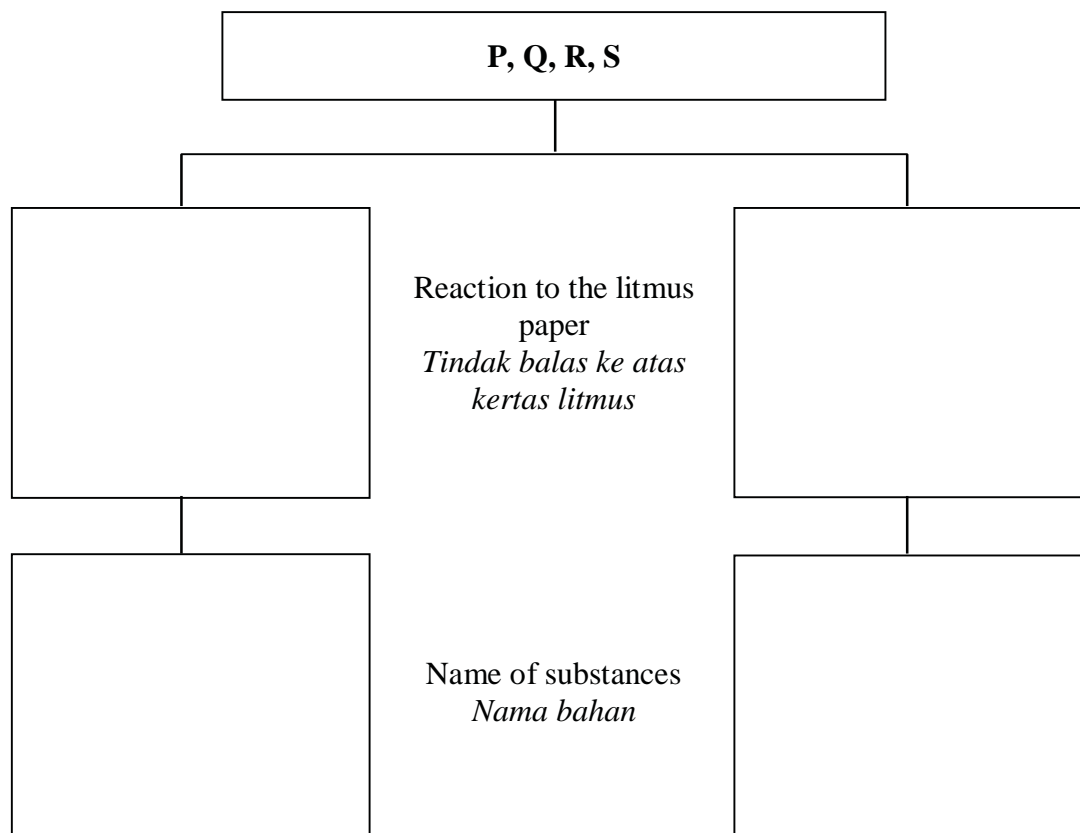
**R** : \_\_\_\_\_

**S** : \_\_\_\_\_

[4 marks]

[4 markah]

- (b) Classify **P, Q, R** and **S** into two groups based on their **reaction to the litmus paper**.  
*Kelaskan P, Q, R dan S kepada dua kumpulan berdasarkan tindak balas ke atas kertas litmus.*



[4 marks]  
[4 markah]

SULIT

55/2

8 (a) Diagram 8.1 shows the arrangement of a circuit to investigate the relationship between the thickness of copper wire and the current.

*Rajah 8.1 menunjukkan satu susunan litar untuk menyiasat hubungan di antara ketebalan wayar dengan arus.*

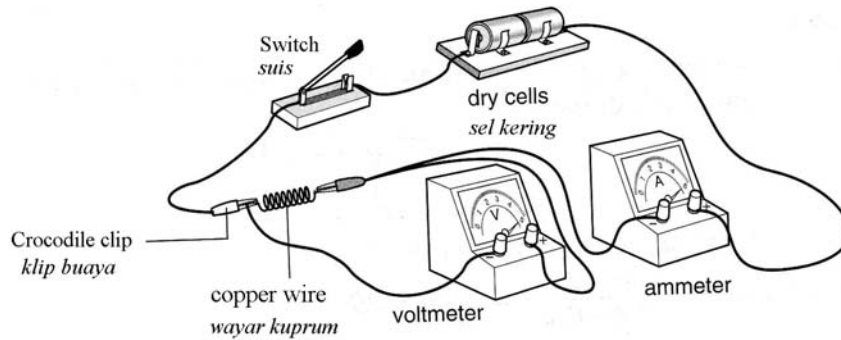
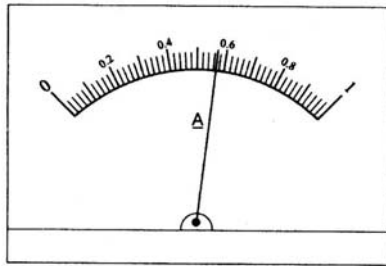


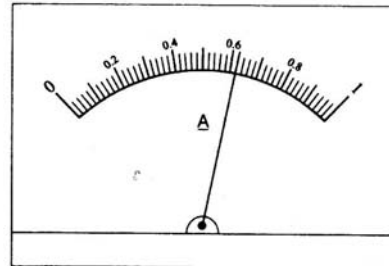
Diagram 8.1  
*Rajah 8.1*

Diagram 8.2 shows the ammeter reading of the above experiment with the different thickness of copper wire.

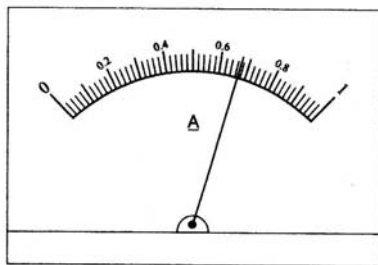
*Rajah 8.2 menunjukkan bacaan ammeter dari eksperimen di atas dengan ketebalan wayar kuprum yang berbeza.*



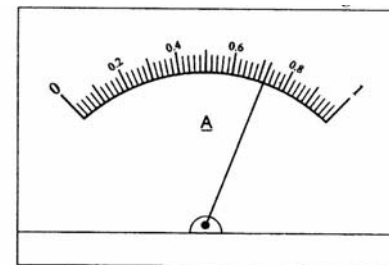
The thickness of copper wire = 2 mm  
*Ketebalan wayar kuprum = 2 mm*



The thickness of copper wire = 3 mm  
*Ketebalan wayar kuprum = 3 mm*



The thickness of copper wire = 4 mm  
*Ketebalan wayar kuprum = 4 mm*



The thickness of copper wire = 5 mm  
*Ketebalan wayar kuprum = 5 mm*

Diagram 8.2  
*Rajah 8.2*

- (i) Complete table 8.1 by recording the ammeter reading on the respective thickness of copper wire.

*Lengkapkan jadual 8.3 dengan mencatatkan bacaan ammeter yang sepadan dengan ketebalan wayar kuprum.*

Thickness of copper wire / mm <i>Ketebalan wayar kuprum / mm</i>	1	2	3	4	5
Ammeter reading / A <i>Bacaan ammeter / A</i>	0.52				

Table 8.1  
*Jadual 8.1*

[2 marks]  
[2 markah]

- (ii) State the variables involves in this experiment.

*Nyatakan pembolehubah yang terlibat dalam eksperimen ini.*

Manipulated variables <i>Pembolehubah yang dimanipulasi</i>	
Responding variables <i>Pembolehubah bergerak balas</i>	
Constant variables <i>Pembolehubah dimalarkan</i>	Type of wire, number of dry cells, length of wire <i>Jenis wayar, bilangan sel kering, panjang wayar</i>

[2 marks]  
[2 markah]

- (b) (i) State one inference from the above experiment.  
*Nyatakan satu inferens dari eksperimen di atas.*

[1 mark]  
[1 markah]

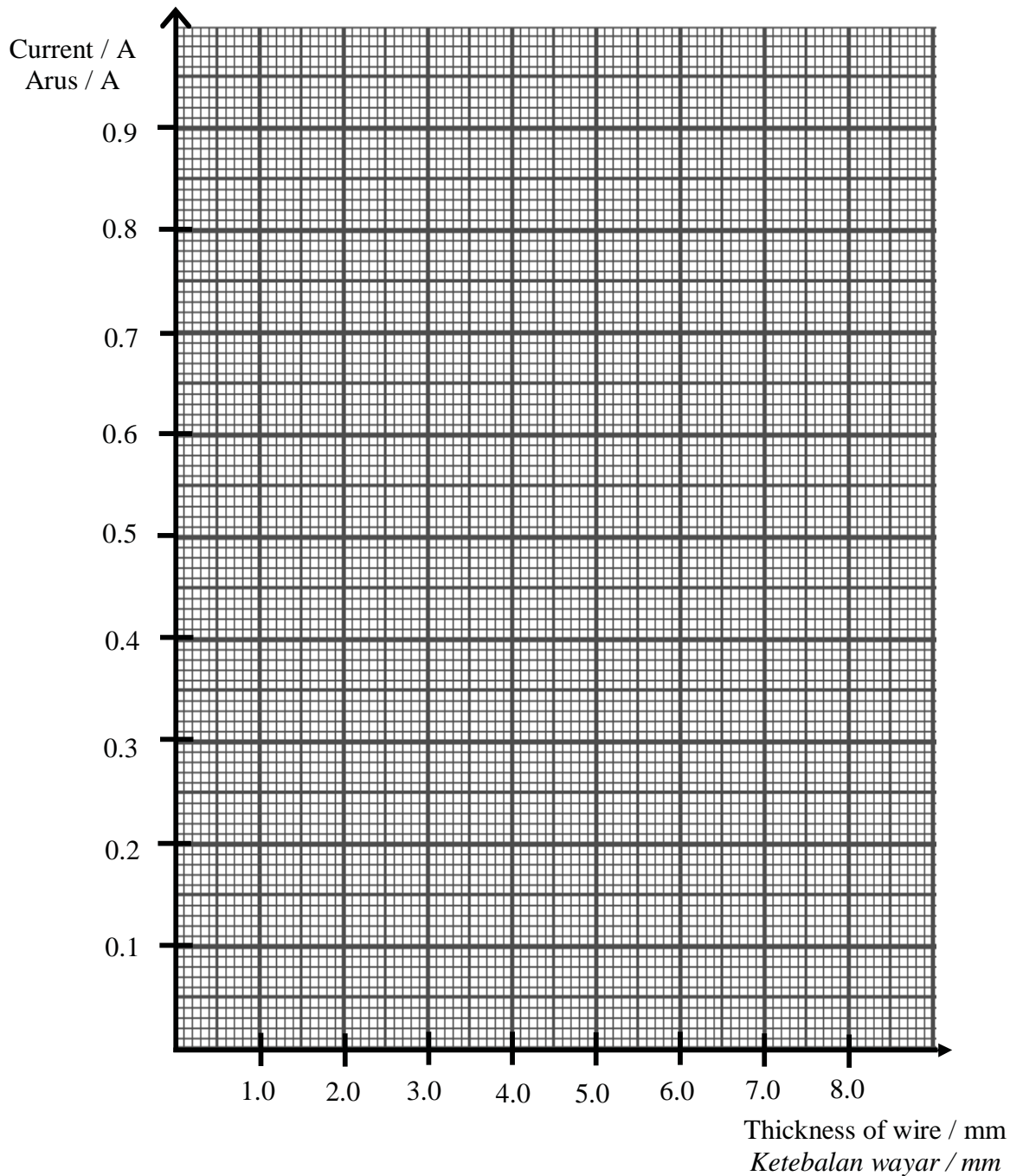
- (ii) State one hypothesis from the above experiment.  
*Nyatakan satu hipotesis dari eksperimen di atas.*

[1 mark]  
[1 markah]

- (c) Based on the data in Table 8.1, draw a graph of electric current against thickness of wire.

*Berdasarkan data pada Jadual 8.1, lukiskan graf arus elektrik melawan ketebalan wayar.*

[2 marks]  
[2 markah]



- (d) (i) Based on the graph in (c) predict the ammeter reading for copper wire with the thickness of 6.0 mm.

*Berdasarkan graf pada (c), ramalkan bacaan ammeter bagi wayar kuprum yang tebalnya 6.0 mm*

[1 mark]

[1 markah]

**SULIT****55/2**

- (d) (ii) Based on experiment in (a), state the **operational definition** of current.  
*Berdasarkan eksperimen di (a), nyatakan **definisi secara operasi** bagi arus.*

[1 mark]

[1 markah]

- (e) State two other factors that influence the electric current value.  
*Nyatakan dua faktor lain yang mempengaruhi nilai arus elektrik.*

1) \_\_\_\_\_

2) \_\_\_\_\_

[2 marks]

[2 markah]

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

**INFORMATION FOR CANDIDATES**  
**MAKLUMAT KEPADA CALON**

1. This question paper consists of two sections: **Section A** and **Section B**.  
*Kertas soalan ini mengandungi dua bahagian: **Bahagian A dan Bahagian B**.*
2. Answer **all** questions in both sections.  
*Jawab **semua** soalan dalam kedua-dua bahagian.*
3. Write your answers in the spaces provided in the question paper.  
*Tulis jawapan anda dalam ruangan yang disediakan dalam kertas soalan.*
4. Show your working, it may help you to get marks.  
*Tunjukkan jalan kerja, ia akan membantu anda mendapat markah.*
5. If you wish to change your answer, neatly cross out the answer that you have done. Then write down the new answer.  
*Jika ingin menukar jawapan, potong jawapan yang salah dengan kemas. Kemudian tulis jawapan baru anda.*
6. The diagrams in the questions provided are not drawn to scale unless stated.  
*Semua rajah dalam soalan tidak dilukis mengikut skala kecuali dinyatakan.*
7. Marks allocated for each question or sub-part of a question are shown in brackets.  
*Markah untuk setiap soalan atau pecahan soalan ditunjukkan di dalam kurungan.*
8. The time suggested to complete **Section A** is 60 minutes and **Section B** is 30 minutes.  
*Masa yang dicadangkan untuk melengkapkan **Bahagian A** ialah 60 minit dan **Bahagian B** 30 minit.*
9. You may use a non-programmable scientific calculator.  
*Calon boleh menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*
10. Hand in this question paper to the invigilator at the end of the examination.  
*Hantar kertas soalan ini kepada pengawas peperiksaan setelah tamat waktu peperiksaan.*

**Skema kertas 1**  
**Percubaan PMR SBP 2010**  
**Sains**

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

A = 6  
B = 8  
C = 12  
D = 14

**MARKING SCHEME FOR PAPER 2  
SCIENCE  
TRIAL PMR 2010**

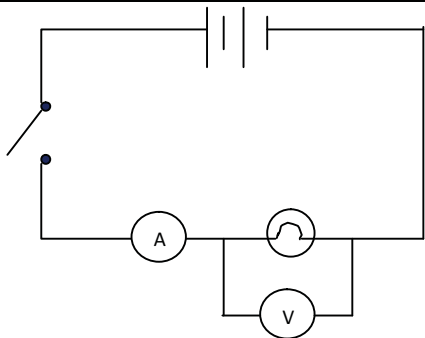
QUESTION	ANSWER	MARK	TOTAL MARKS
1 (a)	P : Liver	1	3
	Q : Gall bladder	1	
	R : Pancreas	1	
1 (b)	Stores bile	1	1
1 (c)	Stomach	1	1
1 (d)	Amylase, protease and lipase (all three corrects – 1 mark)	1	1
<b>TOTAL MARKS</b>		6	6

QUESTION	ANSWER	MARK	TOTAL MARKS
2 (a)(i)	C	1	1
2 (a)(ii)	B , A, C	1	1
2 (b)	An automatic fire alarm // Thermostat in an electric iron // Thermostat in an electric kettle // Bimetallic thermometer (accept any two correct answers)	1	2
		1	
2 (c)(i)	Mercury	1	1
2 (c)(ii)	Mercury can expand and contract evenly when there is a change in temperature	1	1
<b>TOTAL MARKS</b>		6	6

QUESTION	ANSWER	MARK	TOTAL MARKS
3 (a)(i)	Object X is less dense than the water // water is more denser than object X	1	1
3 (a)(ii)	Object Y is denser than the water	1	1
3 (b)	Ping-pong ball // cork (accept any suitable answer)	1	1
3 (c)	The ping-pong ball will <b>float</b> on the surface of water	1	1
3 (d)	Object that is less dense than water floats on the surface of water// Object that is denser than water sink in water.	2	2
<b>TOTAL MARKS</b>		6	6

QUESTION	ANSWER	MARK	TOTAL MARKS
4 (a)		1	1
4 (b)(i)	First class lever	1	1
4 (b)(ii)	Fulcrum is between load and effort	1	1
4 (c)		1	1
4 (d)	$W \times 200 \text{ cm} = 40 \text{ N} \times 50 \text{ cm}$ $W = \frac{40 \text{ N} \times 50 \text{ cm}}{200 \text{ cm}}$ } 1 mark $W = 10 \text{ N}$ } 1 mark	1 1	2
TOTAL MARKS		6	6

QUESTION	ANSWER	MARK	TOTAL MARKS										
5 (a)	Sperm// Male reproductive cell	1	1										
5 (b)(i)	Cell Y	1	1										
5 (b)(ii)	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Cell X</th> <th>Cell Y</th> </tr> </thead> <tbody> <tr> <td>Have head</td> <td>Not have head</td> </tr> <tr> <td>Have tail</td> <td>Not have tail</td> </tr> <tr> <td>Have neck</td> <td>Not have neck</td> </tr> <tr> <td>Shape like a tadpole</td> <td>Spherical shape</td> </tr> </tbody> </table> <p>*Choose one</p>	Cell X	Cell Y	Have head	Not have head	Have tail	Not have tail	Have neck	Not have neck	Shape like a tadpole	Spherical shape	1	1
Cell X	Cell Y												
Have head	Not have head												
Have tail	Not have tail												
Have neck	Not have neck												
Shape like a tadpole	Spherical shape												
5 (b)(iii)	Cell X has tail	1	1										
5 (c)	Fertile phase // ovulation phase	1	2										
	During that phase ovum being release// Ovulation occurs	1											
5 (d)	Taking contraceptive pills // Natural/rhythm method //	1	2										
	Using a condom //Using a diaphragm// Using spermicide//	1											
	Using a intrauterine contraceptive device (IUCD) (accept any two correct answers)												
TOTAL MARKS		8	8										

QUESTION	ANSWER	MARK	TOTAL MARKS
6 (a)(i)	To prevent excess current enter into electrical appliances // to avoid the appliances from damage when there are excess current.	1	1
6 (a)(ii)	Green strip yellow//green and yellow	1	1
6 (a)(iii)	Their body made up from plastics / insulator material	1	1
6 (b)	Current = power / voltage Current = $\frac{1100 \text{ W}}{240 \text{ V}}$ Current = 4.58 A// = 4.6 A	1 1	2
6 (c)	 <p>All correct symbols – 1 mark Ammeter connected in series – 1 mark Voltmeter connected in parallel – 1 mark</p>	1 1 1	3
TOTAL MARKS		8	8

QUESTION	ANSWER	MARK	TOTAL MARKS								
7 (a)	<table border="1" style="width: 100%;"> <tr> <td>P</td> <td>Remain blue // No change</td> </tr> <tr> <td>Q</td> <td>Remain blue // No change</td> </tr> <tr> <td>R</td> <td>Blue to red</td> </tr> <tr> <td>S</td> <td>Remain blue // No change</td> </tr> </table>	P	Remain blue // No change	Q	Remain blue // No change	R	Blue to red	S	Remain blue // No change	1 1 1 1	4
P	Remain blue // No change										
Q	Remain blue // No change										
R	Blue to red										
S	Remain blue // No change										
7 (b)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border: 1px solid black; padding: 5px; text-align: center;">Turn blue litmus paper to red</td> <td style="width: 50%; border: 1px solid black; padding: 5px; text-align: center;">Turn red litmus paper to blue</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">Lemon</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">Toothpaste Shampoo Soap</td> </tr> </table>	Turn blue litmus paper to red	Turn red litmus paper to blue	Lemon	Toothpaste Shampoo Soap	1 1 1 1	4				
Turn blue litmus paper to red	Turn red litmus paper to blue										
Lemon	Toothpaste Shampoo Soap										
TOTAL MARKS		8	8								

QUESTION	ANSWER	MARK	TOTAL MARKS												
8 (a)(i)	<table border="1"> <tr> <td>Thickness of copper wire / mm <i>Ketebalan wayar kuprum / mm</i></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>Ammeter reading / A <i>Bacaan ammeter / A</i></td> <td>0.52</td> <td>0.57</td> <td>0.62</td> <td>0.67</td> <td>0.72</td> </tr> </table> <p>4 correct readings – 2 marks 3 correct readings – 1 mark 2 or 1 correct reading – no mark</p>	Thickness of copper wire / mm <i>Ketebalan wayar kuprum / mm</i>	1	2	3	4	5	Ammeter reading / A <i>Bacaan ammeter / A</i>	0.52	0.57	0.62	0.67	0.72	2	2
Thickness of copper wire / mm <i>Ketebalan wayar kuprum / mm</i>	1	2	3	4	5										
Ammeter reading / A <i>Bacaan ammeter / A</i>	0.52	0.57	0.62	0.67	0.72										
8(a)(ii)	<p>Manipulated variables : Thickness of copper wire Responding variables : Ammeter reading // Current</p>	1 1	2												
8 (b)(i)	<p>Thickness of the wire affect the current // Current depends on the thickness of copper wire</p>	1	1												
8 (b)(ii)	<p>The thicker the wire the greater the current // The thinner the wire the smaller the current</p>	1	1												
8 (c)	<p>All points correctly plot – 1 mark Straight line – 1 mark</p>	1 1	2												
8 (d)(i)	7.7 ± 0.1 A	1	1												
8 (d)(ii)	Current is an ammeter reading	1	1												
8 (e)	<p>Length of wire // Type of wire // Temperature of wire (accept any two correct answers)</p>	1 1	2												
	TOTAL MARKS	12	12												