

Koleksi Soalan Kertas 2 Form 3 2011

- Johor
- Kedah
- Kelantan
- Melaka
- MRSM
- Negeri Sembilan
- Pahang
- Pulau Pinang
- Perak
- Perlis
- Sabah
- Sarawak
- SBP
- Selangor
- Terengganu
- Wilayah Persekutuan

Hanya negeri yang berwarna merah sahaja telah disediakan. Lain-lain akan disediakan kemudian

Johor 2011

- 3 (a) Diagram 3.1 shows an experiment to study the reaction between oxygen and metals.

Rajah 3.1 menunjukkan satu eksperimen untuk mengkaji tindak balas antara oksigen dengan logam.

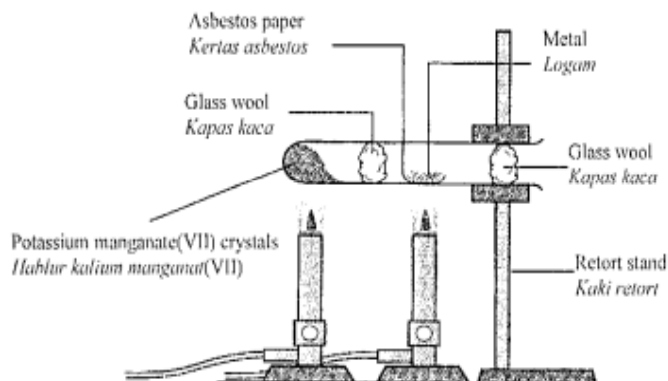


Diagram 3.1
Rajah 3.1

The observations of the experiment are as follows :

Pemerhatian eksperimen adalah seperti berikut :

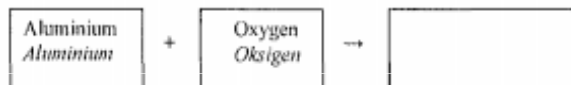
Metal Logam	Observation Pemerhatian
Aluminium Aluminium	Burns with a bright flame Terbakar dengan nyalaan terang
Iron Besi	Glows Berbara

- (i) What is the purpose of heating the potassium manganate crystals?
Apakah tujuan memanas hablur kalium manganat(VII)?

[1]

- (ii) Complete the word equation given for the reaction between aluminium and oxygen.

Lengkapkan persamaan dengan perkataan berikut bagi tindakbalas antara aluminium dengan oksigen.



[1 mark]

[1 markah]

- (iii) Different metals react with oxygen at different rate. Arrange aluminium and iron in the spaces provided according to their rate of reaction with oxygen.

Logam yang berlainan bertindakbalas terhadap oksigen pada kadar yang berbeza.

Susun logam aluminium dan besi dalam ruangan yang disediakan merujuk kepada kadar tindakbalas logam-logam tersebut dengan oksigen.



Reactivity decreases
Kereaktifan semakin menurun

[2 marks]

- (b) Diagram 3.2 shows an experiment to study the reaction between metal and sulphur.

Rajah 3.2 menunjukkan satu eksperimen untuk mengkaji tindak balas antara logam dengan sulfur.

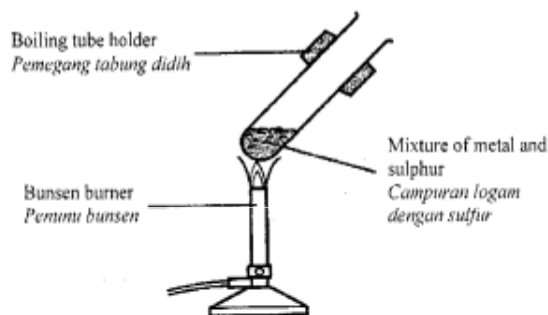


Diagram 3.2
Rajah 3.2

Complete Table 3 by stating the product of the reaction between sulphur and the metal given.

Lengkapkan Jadual 3 dengan menyatakan hasil bagi tindakbalas antara sulfur dengan logam yang diberikan.

Reaction between metal and sulphur Tindakbalas antara logam dengan sulfur	Product of reaction Hasil tindakbalas
Magnesium and Sulphur Magnesium dan sulfur	
Zinc and Sulphur Zink dan sulfur	

Table 3
Jadual 3

[2 marks]

- 6 Diagram 6.1 shows the phases of the menstrual cycle.
Rajah 6.1 menunjukkan fasa-fasa dalam kitaran haid.

Johor 2011



Diagram 6.1
Rajah 6.1

- (a) (i) Based on Diagram 6.1, state the phase where the lining of the uterus wall breaks down and discharged through the vagina.
Berdasarkan Rajah 6.1, nyatakan fasa di mana lapisan dinding uterus runtuh dan dikeluarkan dari vagina.
-
[1 mark]
[1 markah]
- (ii) Name the phase in (a)(i).
Namakan fasa (a)(i).
-
[1 mark]
[1 markah]
- (iii) Besides the lining of the uterus, name **one** other substance that will be discharged during this phase.
Selain daripada lapisan dinding uterus, namakan **sat**u bahan lain yang akan dikeluarkan semasa fasa ini.
-
[1 mark]

- (b) Diagram 6.2 shows a process which may occur in one of the phases in the menstrual cycle.
Rajah 6.2 menunjukkan satu proses yang mungkin berlaku dalam salah satu fasa kitaran haid.

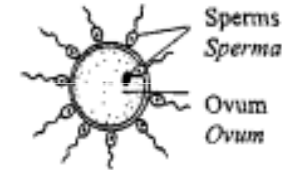


Diagram 6.2
Rajah 6.2

- (i) Name the process.
Nama proses ini.
-
[1 mark]
[1 markah]
- (ii) State the place in the female reproductive system where this process occurs.
Nyatakan tempat dalam sistem pembiakan wanita di mana proses ini berlaku.
-
[1 mark]
[1 markah]
- (iii) At which phase in the menstrual cycle will the process in Diagram 6.2 take place?
Pada fasa manakah proses di Rajah 6.2 akan berlaku dalam kitaran haid?
-
[1 mark]
[1 markah]
- (iv) If a woman's menstrual cycle starts on the 20th April, when will the process in Diagram 6.2 probably occur?
Jika kitaran haid seorang wanita bermula pada 20 April, bilakah kemungkinan proses dalam Rajah 6.2 berlaku?
-
[1 mark]
[1 markah]
- (c) Why is it important to maintain personal hygiene during menstruation?
Mengapakah penting untuk menjaga kebersihan diri ketika haid?
-
[1 mark]

Johor 2011

The time suggested to answer this section is **30 minutes**.

Masa yang dicadangkan untuk menjawab bahagian ini ialah 30 minit.

- 7 Diagram 7.1 shows a simplified diagram of the components in the electricity transmission and distribution system. Transformers P, Q, R and S are connected to raise or reduce the voltage supplied in the national network system.
Rajah 7.1 menunjukkan ringkasan komponen sistem penghantaran dan pengedaran elektrik. Transformer-transformer P, Q, R dan S disambung untuk meningkatkan atau mengurangkan voltan yang dibekalkan dalam sistem rangkaian nasional.

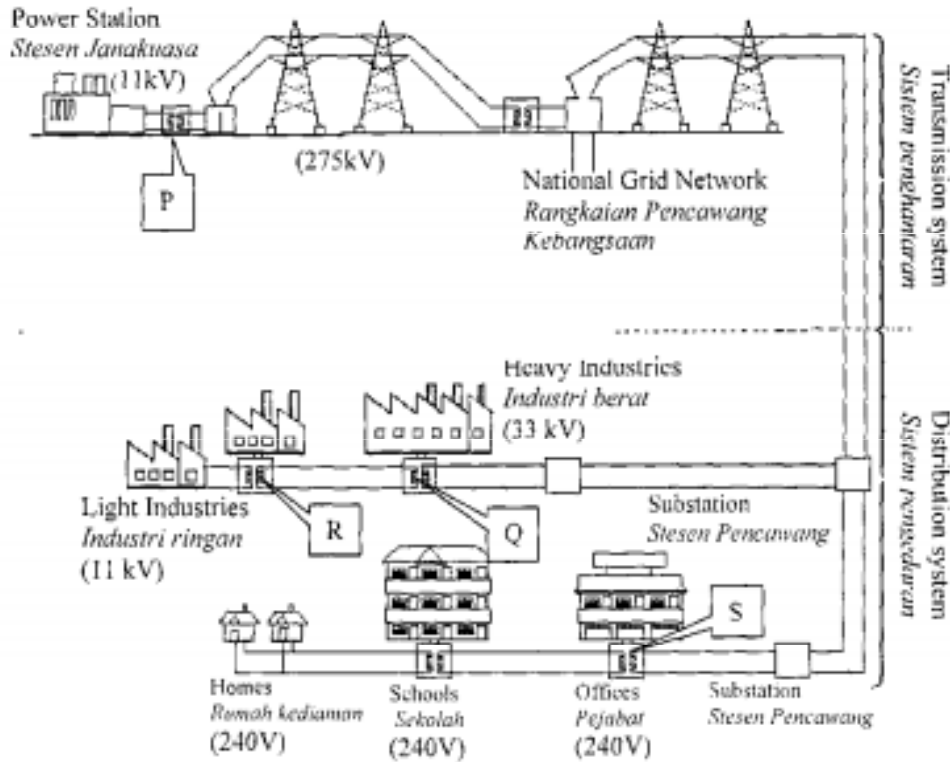


Diagram 7.1
Rajah 7.1

- (a) Based on your observation in Diagram 7.1 identify the type of transformer represented by P, Q, R, and S.
Berdasarkan pemerhatian anda dalam Rajah 7.1, kenalpasti jenis transformer yang diwakili oleh P, Q, R, dan S.

Transformer <i>Transformer</i>	Type of transformer <i>Jenis transformer</i>
P	
Q	
R	
S	

[4 marks
[4 markah

- (b) Two transformers were set-up by a student as shown in Diagram 7.2. Both transformers have the same number of turns in the primary coil. The student observed that the bulb in Situation A is brighter.
Dua transformer disediakan oleh seorang pelajar seperti dalam Rajah 7.2. Kedua-dua transformer itu mempunyai bilangan lilitan yang sama dalam gegelung primer. Pelajar itu mendapati mentol dalam situasi A lebih cera nyalaannya.

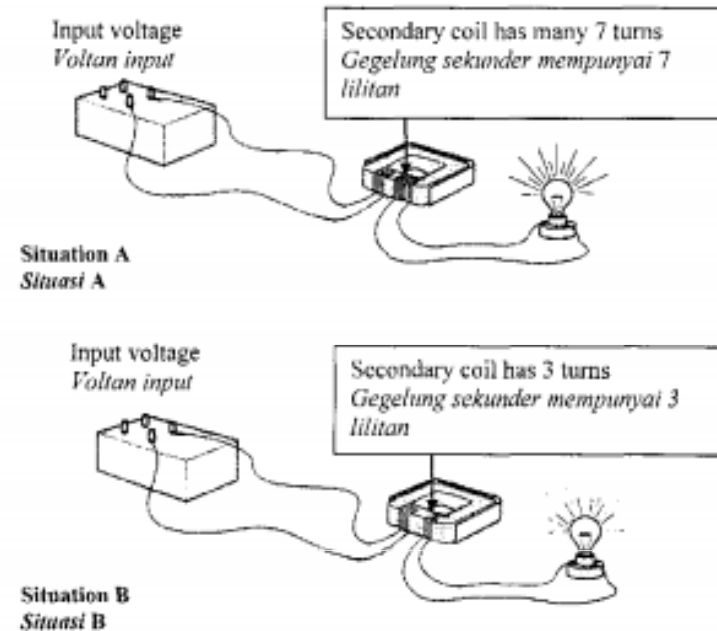


Diagram 7.2

- (i) What inference can be made based on Diagram 7.2?
Apakah inferens yang boleh dibuat berdasarkan Rajah 7.2?

.....

[1 mark]
 [1 markah]

Johor 2011

- (ii) State the constant variable in this experiment.
Nyatakan pemboleh ubah dimalarkan dalam eksperimen ini.

.....

[1 mark]
 [1 markah]

- (iii) Based on the Diagram 7.2, identify the type of transformer in used in situation A and B.
Berdasarkan Rajah 7.2, kenalpasti jenis transformer yang digunakan dalam situasi A dan B.

Situation <i>Situasi</i>	Type of transformer <i>Jenis transformer</i>
A	
B	

[2 marks]

Kelantan

3. Diagram 3.1 shows the human growth curve.
Rajah 3.1 menunjukkan lengkung pertumbuhan manusia.

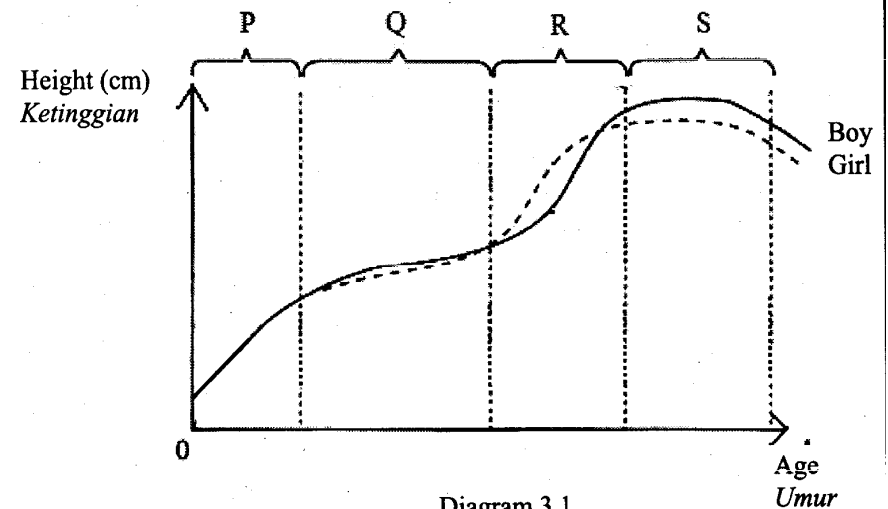


Diagram 3.1
 Rajah 3.1

- (a) What is 'growth'?
Apakah 'pertumbuhan'?
-
 [1 mark]
- (b) At which stage is the growth rate of the girl the same as the boy?
Pada peringkat manakah kadar pertumbuhan perempuan sama dengan lelaki?
-
 [1 mark]
- (c) At which stage in diagram 3.1, does the girl start to experience menstrual cycle?
Pada peringkat manakah dalam rajah 3.1, seorang budak perempuan akan mula mengalami kitar haid?
-
 [1 mark]

[1 mark]

- (d) Diagram 3.2 shows a menstrual cycle of a girl
Rajah 3.2 menunjukkan kitar haid seorang budak perempuan.

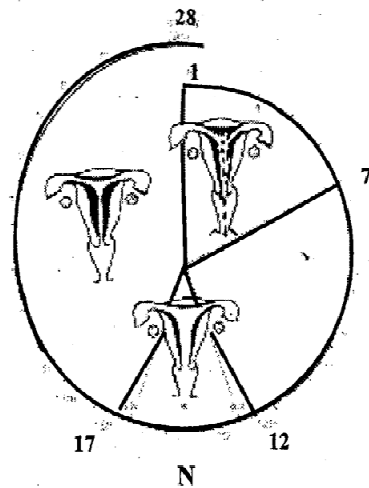


Diagram 3.2
Rajah 3.2

- (i) Based on diagram 3.2, name phase N.
Berdasarkan rajah 3.2, namakan fasa N.

.....
 [1 mark]

- (ii) State what happen to the ovary during the phase.
Nyatakan apa yang berlaku kepada ovari semasa fasa ini.

.....
 [1 mark]

- (e) The calendar shows that a girl's last period began on 2 August 2011.
 Circle the date on the calendar when her next period will probably begin
Kalendar menunjukkan haid seorang budak perempuan yang bermula pada 2 Ogos 2011. Bulatkan pada kalendar tarikh haid yang berikut akan bermula.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31					

[1 mark]

Kelantan

8. Diagram 8.1(a) and 8.1 (b) shows bulbs is connected in an electric circuit.
Rajah 8.1(a) dan 8.1(b) menunjukkan mentol-mentol yang disambungkan dalam suatu litar elektrik.

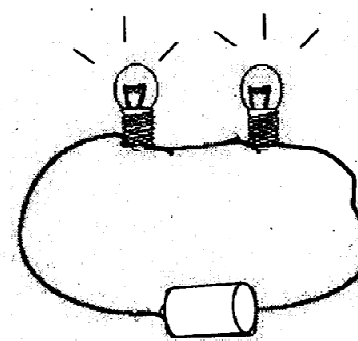


Diagram 8.1(a)
Rajah 8.1 (a)

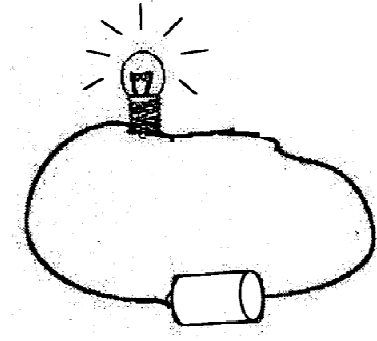


Diagram 8.1(b)
Rajah 8.1 (b)

- (a)(i) Based on the observation, state the difference in brightness of the bulbs in diagram 8.1(a) and 8.1(b).
Berdasarkan pemerhatian, nyatakan perbezaan kecerahan mentol-mentol dalam rajah 8.1(a) dan 8.1(b).

.....
 [1 mark]

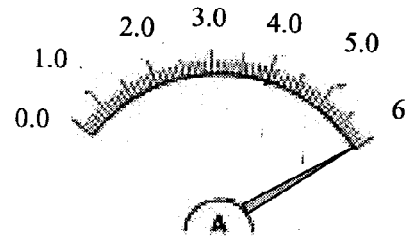
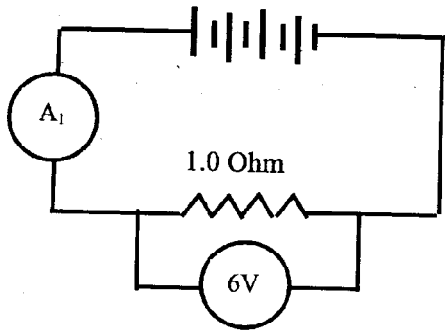
- (ii) State **one** inference based on the observation.
*Nyatakan **satu** inferens berdasarkan pemerhatian.*

.....
 [1 mark]

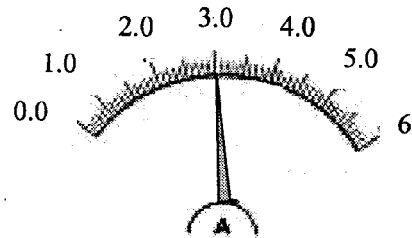
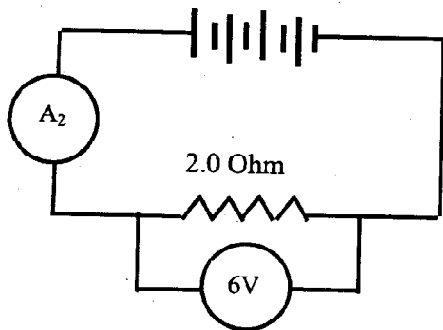
- (iii) State the hypothesis based on the observation.
Nyatakan hipotesis berdasarkan pemerhatian.

.....
 [1 mark]

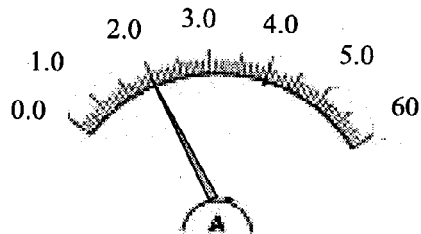
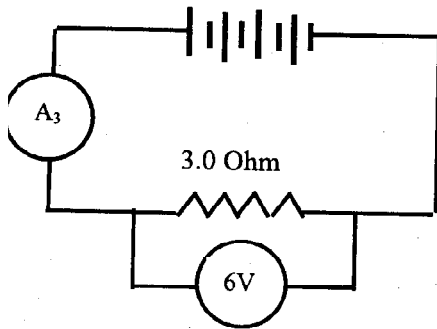
(b) Diagram 8.2 shows an experiment to determine the relationship between the resistance in circuit and the electric current flowing in the circuit.
Rajah 8.2 menunjukkan suatu eksperimen untuk menentukan hubungan antara rintangan dalam litar dengan arus elektrik yang mengalir dalam litar.



Ammeter reading, $A_1 = 6 \text{ A}$
Bacaan ammeter, $A_1 =$

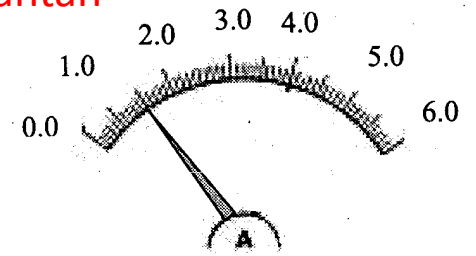
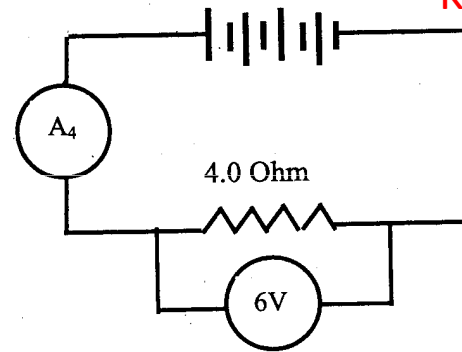


Ammeter reading, $A_2 =$
Bacaan ammeter, $A_2 =$



Ammeter reading, $A_3 =$
Bacaan ammeter, $A_3 =$

Kelantan



Ammeter reading, $A_4 = 1.5 \text{ A}$
Bacaan ammeter, $A_4 = 1.5 \text{ A}$

Diagram 8.2
Rajah 8.2

(i) State the variables involved,
Nyatakan pemboleh ubah yang terlibat,

Manipulated variable :
Pemboleh ubah dimanipulasi

Responding variable:
Pemboleh ubah bergerak balas:

[2 marks]

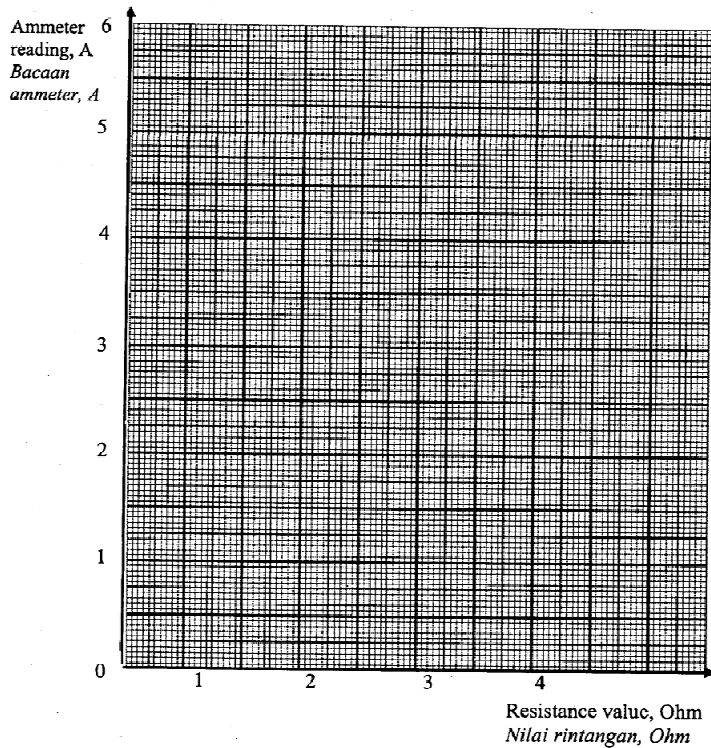
(ii) Record the ammeter reading in table 8.3
Recordkan bacaan ammeter dalam jadual 8.3

Resistance value, Ohm <i>Nilai rintangan</i>	1.0	2.0	3.0	4.0
Ammeter reading, A <i>Bacaan ammeter, A</i>	6.0			1.5

Table 8.3
Jadual 8.3

7
 [2 marks]

- (c) Based on table 8.3, draw a graph current against resistance
 Berdasarkan jadual 8.3, lukiskan satu graf arus melawan rintangan.
 [2 marks]



Melaka

- (a) Diagram 1 shows the structure of the sun.
 Rajah 1 menunjukkan struktur matahari.

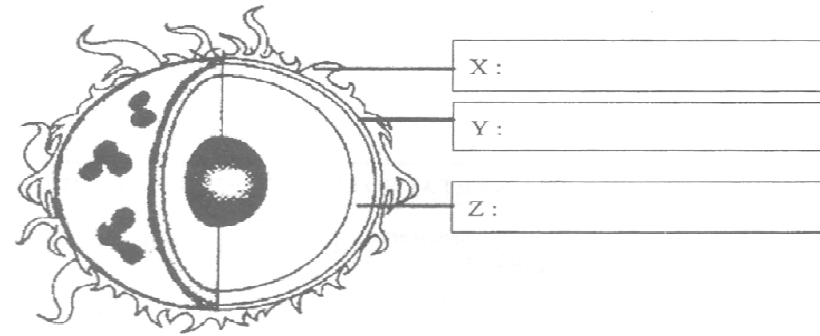


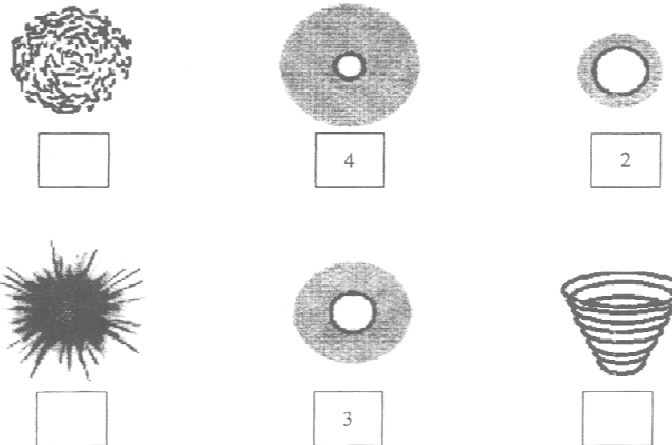
Diagram 1
 Rajah 1

Label X, Y and Z using the words given in the box below.
 Labelkan X, Y dan Z menggunakan perkataan di dalam kotak di bawah.

Chromosphere <i>Kromosfera</i>	Corona <i>Korona</i>	Photosphere <i>Fotosfera</i>
-----------------------------------	-------------------------	---------------------------------

- (b) The following diagrams are the stages of birth and death of stars.
 Rajah-rajah berikut adalah peringkat-peringkat dalam kelahiran dan kematian bintang.
 [3 marks]
 [3 markah]

Arrange the stages in the correct sequence by writing the number of 1, 5 or 6 in the boxes provided. Stages 2, 3 and 4 have been given.
 Susun peringkat-peringkat tersebut mengikut turutan yang betul dengan menulis nombor 1, 5 atau 6 dalam kotak yang telah disediakan. Peringkat 2, 3 dan 4 telah pun diberikan.



[3 marks]
 [3 markah]

- (d) Based on the experiment, define 'current flow' operationally.
 Berdasarkan eksperimen, definisikan 'arus mengalir' secara operasi.

- (e) Based on the graph, predict the ammeter reading if the resistance in the circuit is 2.5 Ohm.
 Berdasarkan graf, ramalkan bacaan ammeter jika rintangan dalam litar adalah 2.5 Ohm.

[1 mark]

- (f) Based on the experiment, state your conclusion.
 Berdasarkan eksperimen, nyatakan kesimpulan anda.

[1 mark]

Melaka

1. (a) Diagram 2.1 shows a hydro-electric dam.
Rajah 2.1 menunjukkan empangan elektrik hidro.

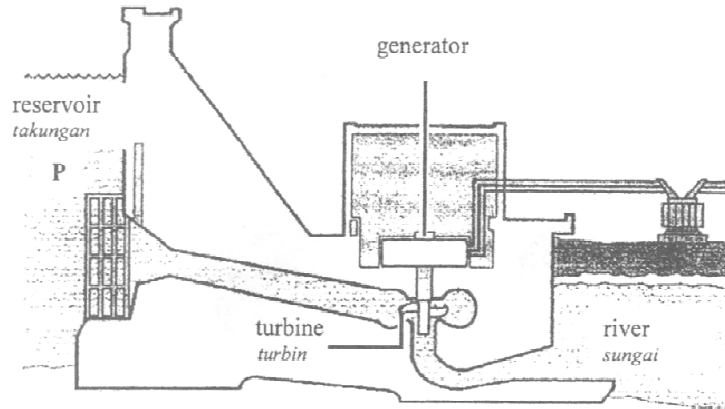


Diagram 2.1
Rajah 2.1

- (i) State the energy stored in P.
Nyatakan tenaga yang disimpan di dalam P.

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

- (ii) Based on Diagram 2.1, generator is an energy converter. State the conversion of energy which takes place in the generator.
Berdasarkan Rajah 2.1, generator adalah sebuah alat pengubah tenaga. Nyatakan perubahan tenaga yang berlaku di dalam generator tersebut.

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

- (iii) Is energy source in Diagram 2.1 classified as renewable sources of energy or non renewable sources of energy?
Adakah sumber tenaga dalam 2.1 dikelaskan sebagai sumber tenaga boleh diperbaharui atau sumber tenaga tidak boleh diperbaharui?

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

- (iv) Give an example of other energy sources in the same class stated in 2 (a) (iii).
Berikan satu contoh sumber tenaga lain di bawah kelas yang sama seperti dinyatakan dalam 2(a)(iii).

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

- (b) Diagram 2.3 shows an energy conversion.
Rajah 2.3 menunjukkan satu perubahan tenaga.



Diagram 2.3
Rajah 2.3

- Which of the following situations show the same energy change as in the Diagram 2.3?
Yang manakah antara situasi berikut menunjukkan perubahan tenaga yang sama seperti dalam Rajah 2.3?

Mark ✓ your answer in the box provided under the following diagrams.
Tandakan ✓ jawapan anda dalam kotak yang disediakan di bawah rajah berikut.



[2 marks]
[2 markah]

4. Diagram 4 shows a patient and four blood donors, K, L, M and N with their respective blood group.
Rajah 4 menunjukkan seorang pesakit dan empat penderma darah, K, L, M dan N dengan kumpulan darah masing-masing.

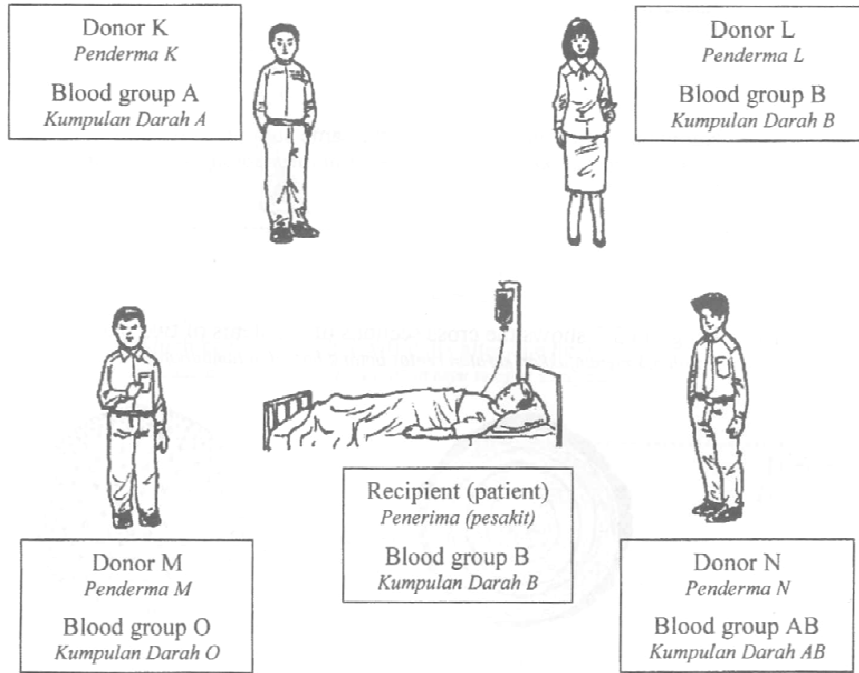


Diagram 4
Rajah 4

- (a) Based on Diagram 4, state **two** donors who can donate blood to the patient safely.
*Berdasarkan Rajah 4, nyatakan **dua** penderma yang layak mendermakan darahnya kepada pesakit dengan selamat.*

[2 marks]
 [2 markah]

- (b) Which blood group in 4(a) is a universal donor?
Yang manakah jenis darah dalam 4(a) adalah penderma universal?

[1 mark]
 1 markah]

- (c) What would happen if an incompatible type of blood is transfused to a recipient?
Apakah yang akan berlaku jika kumpulan darah yang dipindahkan kepada penerima tidak serasi?

[1 mark]
 [1 markah]

- (d) State two conditions that require blood transfusion other than injuries due to accidents.
Nyatakan dua keadaan yang memerlukan pemindahan darah selain daripada kecederaan disebabkan kemalangan.

- (i) :
- (ii) :

[2 marks]
 [2 markah]

Melaka

Melaka

5. Diagram 5.1 shows an activity carried out between the iron filings and sulphur powder that are mixed thoroughly.

Rajah 5.1 menunjukkan aktiviti yang telah dijalankan antara serbuk besi dengan serbuk sulfur yang telah dicampurkan.

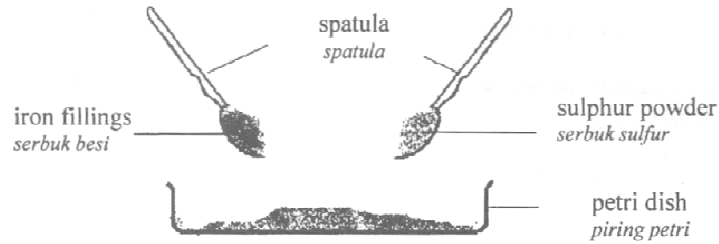


Diagram 5.1
Rajah 5.1

- (a) What will happen if the magnet bar is brought near the petri dish?
Apakah yang akan berlaku jika batang magnet diletakkan berdekatan dengan piring petri?

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

- (b) Is the substance in the petri dish is a mixture or compound?
Adakah bahan di dalam piring petri adalah satu campuran atau sebatian?

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

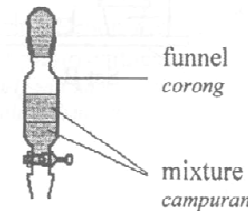
- (c) If the iron filings and sulphur powder are heated strongly, what substance is produced?
Jika serbuk besi dan serbuk sulfur dipanaskan dengan kuat, bahan apakah yang terhasil?

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

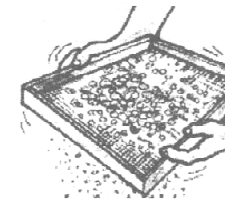
- (d) Can the new substance stated in 5(c) attracted by the magnet bar? Why?
Bolehkah bahan baru yang dinyatakan dalam 5(c) tertarik kepada bar magnet? Mengapa?

.....
.....
[2 marks]
[2 markah]

- (e) Diagram 5.2 shows two methods of separating mixtures.
Rajah 5.2 menunjukkan dua kaedah untuk mengasingkan suatu campuran.



A



B

Diagram 5.2
Rajah 5.2

- (i) Name the methods shown in Diagram 5.2.
Namakan kaedah yang ditunjukkan dalam Rajah 5.2.

Method A :

Kaedah A :

Method B :

Kaedah B :

[2 marks]
[2 markah]

- (ii) Give one example of a mixture that can be separated into its component by using method B.
Berikan satu contoh campuran yang boleh diasingkan kepada komponennya dengan menggunakan kaedah B.

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

- (a) Diagram 8.11 and Diagram 8.12 shows two models of electricity transmission.
Rajah 8.11 dan Rajah 8.12 menunjukkan dua model penghantaran tenaga elektrik.

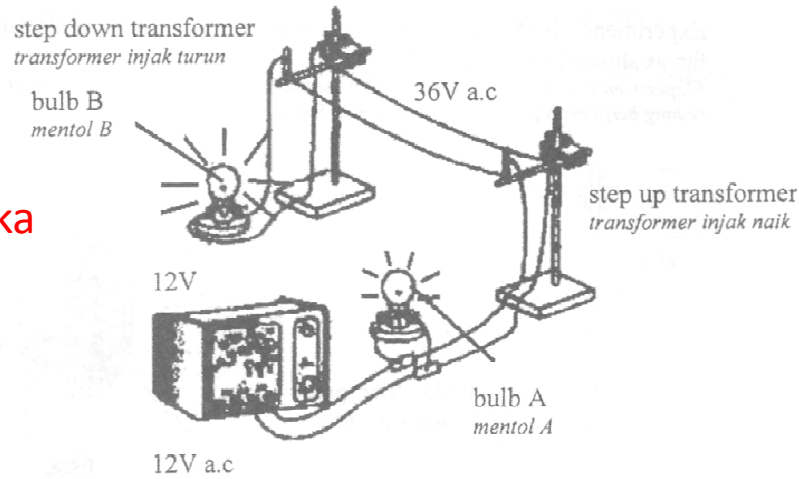


Diagram 8.1
Rajah 8.1

- (i) State the difference between the brightness of bulb A and bulb B.
Nyatakan perbezaan antara kecerahan mentol A dan mentol B.

[1 mark]
[1 markah]

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

[1 mark]
[1 markah]

- (iii) State **one** relationship between the amount of output voltage and the brightness of the bulb.
Nyatakan **satu** hubungan antara jumlah voltan output dengan kecerahan mentol.

[1 mark]
[1 markah]

- (b) Diagram 8.2 shows the experiment to study the relationship between the input voltage and the output voltage with the number of turns in the primary coil and the number of turns in the secondary coil

Rajah 8.2 menunjukkan satu eksperimen untuk mengkaji hubungan antara voltan input dan voltan output dengan bilangan lilitan gegelung primer dan bilangan lilitan gegelung sekunder

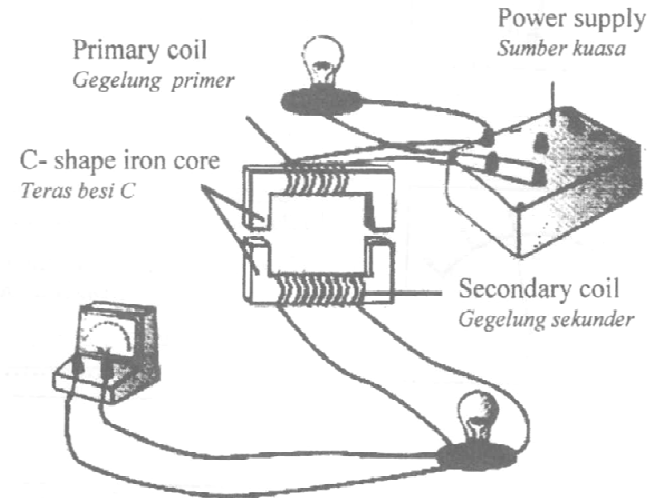
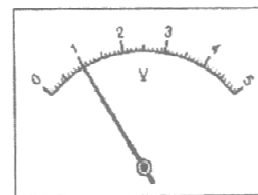


Diagram 8.2
Rajah 8.2

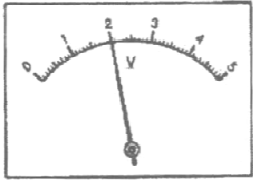
- (i) The experiment is repeated three times more by using different number of turns in the secondary coils that is 20, 30 and 40 turns.
Eksperimen diulang sebanyak tiga kali lagi dengan menggunakan bilangan lilitan yang berbeza bagi gegelung sekunder iaitu 20, 30 and 40 lilitan.

Record the output voltage in the space provided.
Rekod voltan output di dalam ruang yang telah disediakan.

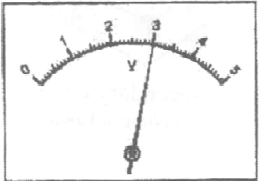


Number of turns in primary coil = 10
Bilangan lilitan gegelung primer = 10
Number of turns in secondary coil = 10
Bilangan lilitan gegelung sekunder = 10
Output voltage = 1.0 V
Voltan output = 1.0V

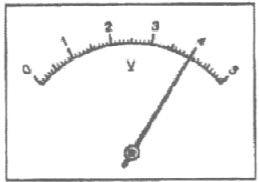
Melaka



Number of turns in primary coil = 10
Bilangan lilitan gegelung primer = 10
 Number of turns in secondary coil = 20
Bilangan lilitan gegelung sekunder = 20
 Output voltage = 2.0 V
Voltan output = 2.0V



Number of turns in primary coil = 10
Bilangan lilitan gegelung primer = 10
 Number of turns in secondary coil = 30
Bilangan lilitan gegelung sekunder = 30
 Output voltage = V
Voltan output =V



Number of turns in primary coil = 10
Bilangan lilitan gegelung primer = 10
 Number of turns in secondary coil = 40
Bilangan lilitan gegelung sekunder = 40
 Output voltage = V
Voltan output =V

Complete Table 8.1 by recording the output voltage on the respective number of turns on the secondary coil.
Lengkapkan jadual 8.1 dengan merekodkan voltan output mengikut bilangan gegelung sekunder masing-masing.

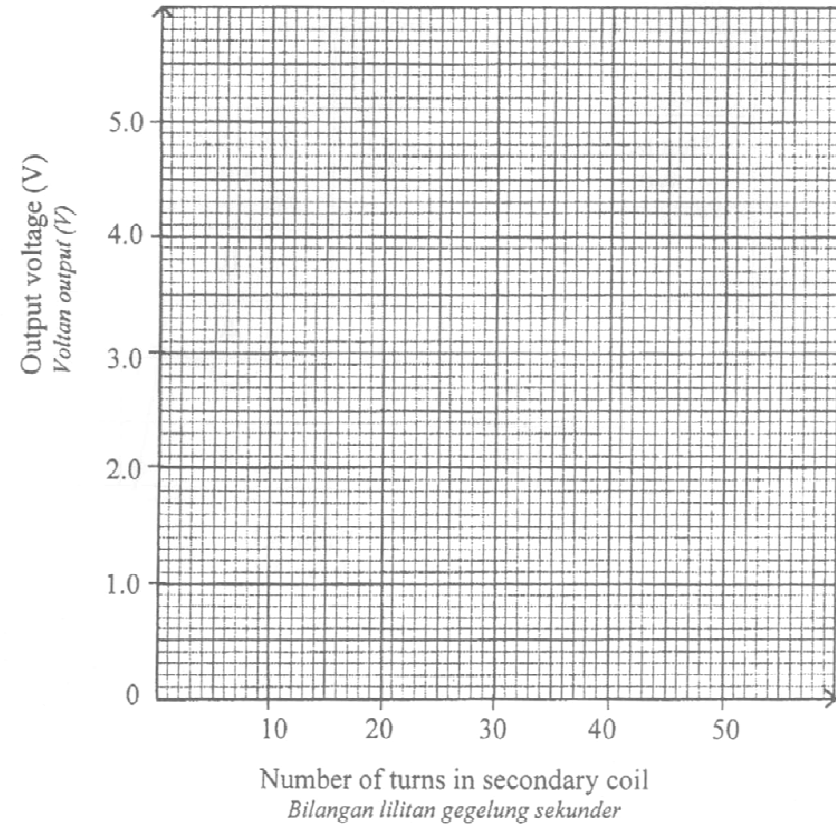
Primary coil <i>Gegelung primer</i>		Secondary coil <i>Gegelung sekunder</i>	
Number of turns <i>Bilangan lilitan</i>	Input voltage <i>Voltan input</i>	Number of turns <i>Bilangan lilitan</i>	Output voltage <i>Voltan output</i>
10	2.0	10	1.0
10	2.0	20	2.0
10	2.0	30	
10	2.0	40	

Table 8.1
Jadual 8.1

[2 marks]

- (ii) Based on the data in Table 8.1, draw a line graph of the output voltage against the number of turns in secondary coils.
Berdasarkan data pada Jadual 8.1, lukis graf garis bagi voltan output melawan bilangan lilitan gegelung sekunder.

Melaka



[2 marks]
 [2 markah]

- (iii) Based on the line graph drawn in 8 (b) (ii), state **one** relationship between the output voltage and the number of turns in secondary coil.
*Berdasarkan graf garis yang dilukis di 8 (b) (ii), nyatakan **satu** hubungan antara voltan output dengan bilangan lilitan gegelung sekunder.*

[1 mark]
 [1 markah]

Melaka

- (iv) State the responding variable in this experiment.
Nyatakan pemboleh ubah yang bergerakbalas dalam eksperimen ini.

[1 mark]
[1 markah]

- (c) (i) State the operational definition for step-up transformer.
Nyatakan definisi secara operasi bagi transformer injak naik.

[1 mark]
[1 markah]

- (ii) Diagram 8.3 shows an electrical transmission and distribution system which involved four transformers, P, Q, R and S.
Rajah 8.3 menunjukkan sistem penghantaran dan pengagihan elektrik yang melibatkan empat transformer P, Q, R dan S.

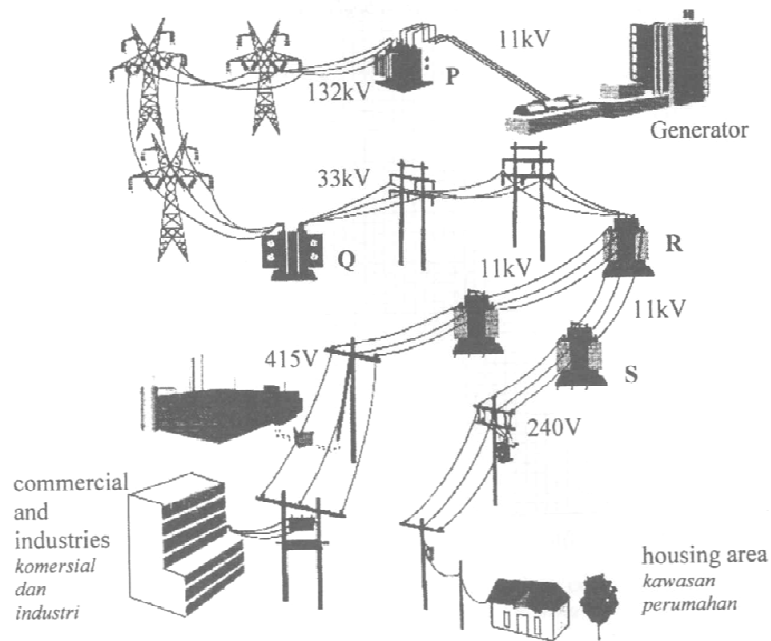


Diagram 8.3
Rajah 8.3

Based on the operational definition of step up transformer in c (i), classify transformer P, Q, R and S in Diagram 8.3 based on type of transformer.

Berdasarkan definisi secara operasi bagi transformer injak naik dalam c (i), kelaskan transformer P, Q, R dan S dalam Rajah 8.3 berdasarkan jenis transformer.

Classification Pengkelasan	Transformer Transformer
Step up transformer Transformer injak naik	
Step down transformer Transformer injak turun	

- 4 Diagram 4.1 shows the apparatus set-up to study the effect of heat on lead sulphide.
Rajah 4.1 menunjukkan susunan radas untuk mengkaji kesan haba ke atas plumbum sulfida. [2 marks]
[2 markah]

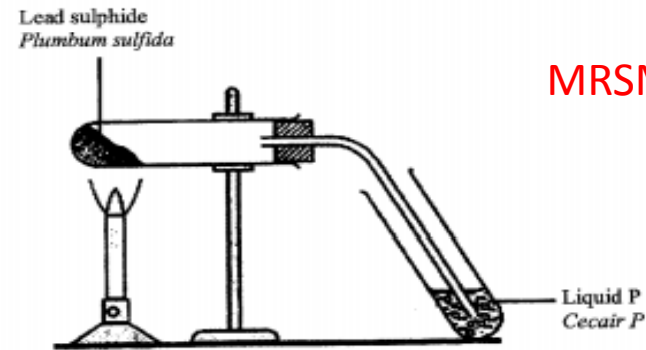


Diagram 4.1
Rajah 4.1

- (a) Name liquid P.
Namakan cecair P.
- [1 mark]
[1 markah]
- (b)(i) What can be observed happening to liquid P at the end of this experiment?
Apakah yang boleh diperhatikan berlaku pada cecair P pada akhir eksperimen?
- [1 mark]
[1 markah]
- (ii) Explain the answer in 4(b)(i).
Terangkan jawapan dalam (4)(b)(i).

[1 mark]
[1 markah]

(iii) What conclusion can be made from this study?
Apakah kesimpulan yang boleh dibuat dari kajian ini?

.....

[1 mark]
 [1 markah]

(c) Complete the word equation for the reaction.
Lengkapkan persamaan perkataan bagi tindak balas ini.

Lead sulphide + oxygen $\xrightarrow[\text{Panasakan}]{\text{Heated}}$ +

Plumbum sulfida + oksigen

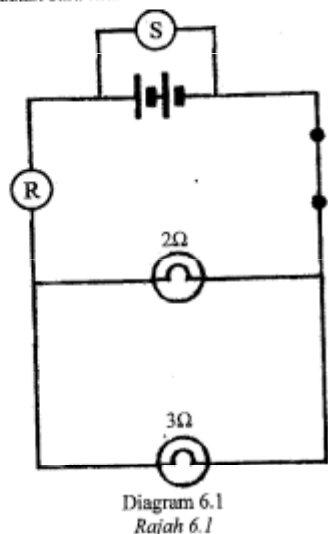
[1 mark]
 [1 markah]

(d) What will happen to liquid P if lead sulphide is replaced with egg shells?
Apakah yang berlaku kepada cecair P sekiranya plumbum sulfida digantikan dengan cangkerang telur?

.....

[1 mark]
 [1 markah]

6(a) Diagram 6.1 shows an electric circuit.
Rajah 6.1 menunjukkan satu litar elektrik.



(i) Name component S.
Namakan komponen S.

.....

[1 mark]
 [1 markah]

(ii) Calculate the current if the reading of voltmeter is 3.0 V.
Hitungkan arus jika bacaan voltmeter adalah 3.0 V.

Voltage (V) = Electric current (A) x Resistance (Ω)
<i>Voltan (V) = Arus elektrik (A) x Rintangan (Ω)</i>

(iii) Predict what happen to the bulbs, if position of component R and S is interchanged.
Ramalkan apa yang berlaku kepada mentol-mentol, sekiranya komponen R dan S bertukar tempat.

.....

[1 mark]
 [1 markah]

(b) Diagram 6.2 shows an electrical circuit to study the effect of resistance on current.
Rajah 6.2 menunjukkan satu litar elektrik untuk mengkaji kesan rintangan terhadap arus.

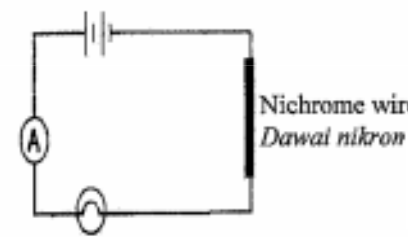
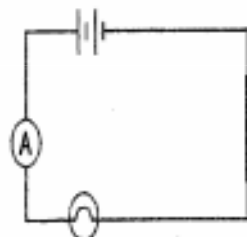


Diagram 6.2
Rajah 6.2

(i) Compare the ammeter reading in Diagram 6.2(a) and 6.2(b).
Bandingkan bacaan ammeter dalam Rajah 6.2(a) dan 6.2(b).

.....

[1 mark]
 [1 markah]

(ii) Explain your answer in 6(b)(i).
Terangkan jawapan anda dalam 6(b)(i).

.....

[2 marks]
 [2 markah]

(iii) Explain what will happen to the ammeter reading in Diagram 6.2(a) if the copper wire is used instead of nichrome wire.
Terangkan apa yang akan terjadi kepada bacaan ammeter dalam Rajah 6.2(a) jika dawai kuprum menggantikan dawai nikrom.

.....

15
 [2 marks]

Negeri Sembilan

Diagram 2.1 shows the internal structure of human heart.
Rajah 2.1 menunjukkan struktur dalaman jantung manusia.

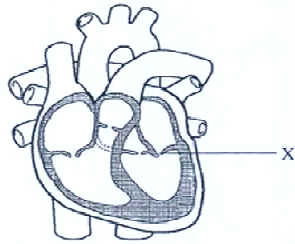


Diagram 2.1
Rajah 2.1

- (a) (i) Name the part labelled X.
Namakan bahagian berlabel X.

[1 mark
[1 markah

- (ii) State **one** function of X.
Nyatakan **satu** fungsi X.

[1 mark
[1 markah

- (b) (i) Besides blood capillaries, give another **two** types of blood vessels in the human body.
Selain kapilari darah, berikan **dua** jenis salur darah yang lain di dalam badan manusia.

[2 marks
[2 markah

- (ii) State **one** difference between the blood vessels, based on your answer in b(i).

Nyatakan **satu** perbezaan antara salur darah – salur darah, berdasarkan jawapan anda di b (i).

[1 mark
[1 markah



- (c) Diagram 2.2 shows narrowing of blood vessels. State **one** of the factor contributing to this problem. Diagram 2.2

Rajah 2.2 menunjukkan penyempitan salur darah. Nyatakan **satu** daripada faktor yang menyumbang kepada masalah ini.

[1 mark
[1 markah

Growth
Pertumbuhan

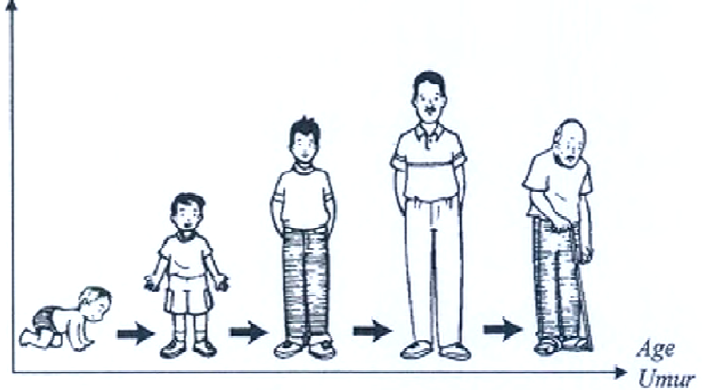


Diagram 4.1
Rajah 4.1

- (a) (i) Based on the Diagram 4.1, give definition of growth.

Berdasarkan Rajah 4.1, berikan definisi pertumbuhan.

[1 mark]
[1 markah]

- (ii) State **one** characteristic of girls at puberty stage.

Nyatakan **satu** ciri bagi perempuan pada peringkat akhil baligh.

[1 mark]
[1 markah]

- (iii) Give **one** reason, why negative growth occurs at old age stage.

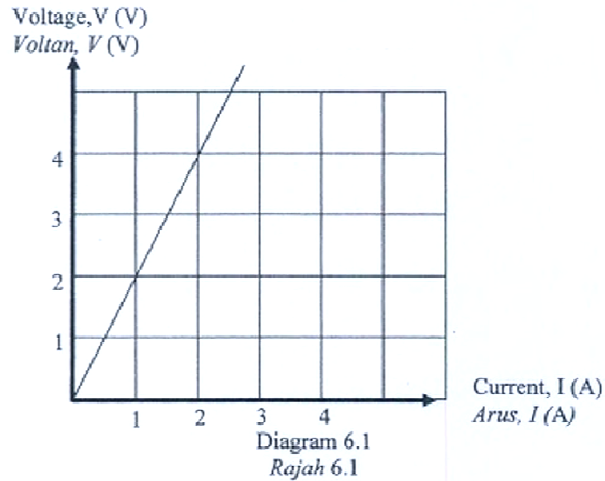
Berikan **satu** sebab, mengapa pertumbuhan negatif berlaku pada peringkat usia tua.

[1 mark]
[1 markah]

SULIT

6 (a) Diagram 6.1 shows a graph of voltage, V against current, I.

Rajah 6.1 menunjukkan satu graf bagi voltan, V melawan arus, I.



(i) Based on the graph in Diagram 6.1, give the value of voltage, V when current, I = 2 A.

Berdasarkan graf di dalam Rajah 6.1, berikan nilai voltan, V apabila arus, I = 2 A.

V = V

[1 mark]
[1 markah]

(ii) Calculate the resistance, R for the values in 6(a)(i).

Kirakan rintangan, R untuk nilai-nilai di dalam 6(a)(i).

$$\text{Resistance (Rintangan), } R = \frac{\text{Voltage (Voltan), } V}{\text{Current (Arus), } I}$$

[2 marks]
[2 markah]

[Lihat soalan seterusnya]

SULIT

(b) By using the symbol of electrical components given in Diagram 6.2, complete the circuit in Diagram 6.3.

Dengan menggunakan simbol bagi komponen-komponen elektrik di dalam Rajah 6.2, lengkapkan litar di dalam Rajah 6.3.



Diagram 6.2
Rajah 6.2

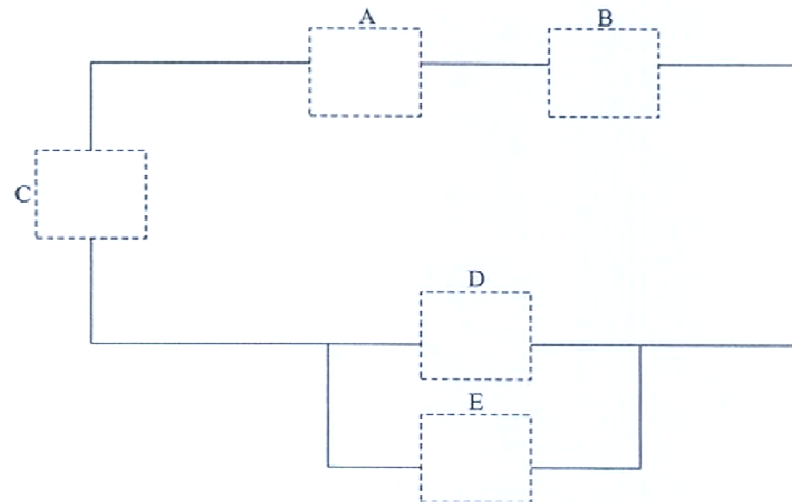


Diagram 6.3
Rajah 6.3

[2 marks]
[2 markah]

- 6 Diagram 6.0 below shows an experiment to study the reaction between metals and non-metals.
Rajah 6.0 di bawah menunjukkan eksperimen bagi mengkaji tindak balas antara logam dan bukan logam.

Pahang



Diagram 6.0
Rajah 6.0

- a) i) What is the function of the potassium manganate (VII) crystals?
Apakah fungsi hablur kalium manganate (VII)?

[1 mark]

- ii) Complete the word equation for this reaction.
Lengkapkan persamaan perkataan bagi tindak balas ini.



[2 marks]

- b) Diagram 6.1 below shows the apparatus set-up for an experiment.
Rajah 6.1 di bawah menunjukkan satu susunan radas bagi satu eksperimen.

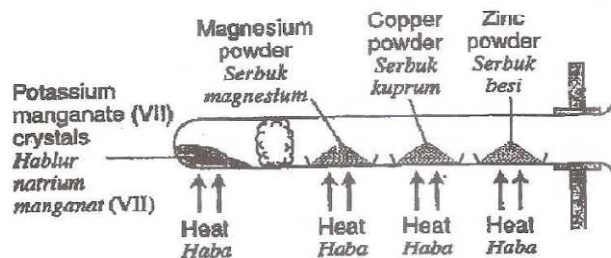


Diagram 6.1 / Rajah 6.1

Metal / Logam	Observation / Pemerhatian
Magnesium powder Serbuk magnesium	Metal burns very brightly Logam terbakar dengan nyalaan sangat terang
Zinc powder Serbuk zink	Metal burns with bright flame Logam terbakar dengan nyalaan terang
Copper powder Serbuk kuprum	Metal glows dimly Logam berbara malap

- i) Arrange the metal powder: magnesium, copper and zinc according to their rate of reaction with oxygen in ascending order.

Susun serbuk logam : magnesium, copper dan zink berdasarkan kadar tindak balas dengan oksigen dalam susunan menaik.

[1 mark]

- c) Diagram 6.2 below shows an experiment to investigate the properties of egg shells.

Rajah 6.2 di bawah menunjukkan satu eksperimen untuk mengkaji ciri-ciri kulit telur.

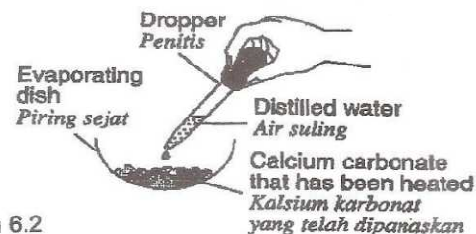


Diagram 6.2
Rajah 6.2

When a few drops of distilled water is added to the calcium carbonate that has been heated strongly, a new substance is formed.

Apabila beberapa titis air suling ditambahkan pada kalsium karbonat yang telah dipanaskan dengan kuat, bahan baru terbentuk.

- i) What is a new substance formed in the evaporating dish?
Apakah bahan baru yang terbentuk di dalam piring penyejatan?

[1 mark]

- ii) A teacher wants to make limewater, what must we do to the new substance formed?

Seorang guru ingin menyediakan air kapur, apakah yang mesti kita buat pada bahan baru yang terbentuk?

[1 mark]



Pahang

Diagram 6.3
Rajah 6.3

- iii) State two elements present in the substances.
Nyatakan dua unsur yang wujud dalam bahan tersebut.

..... and
[1 mark]

- iv) A gas is produced when acid is poured onto the substances in Diagram 6.3. How do you test the gas?

Sejenis gas dihasilkan apabila asid dituangkan ke atas bahan di dalam Rajah 6.3. Bagaimanakah kamu menguji gas tersebut?

.....
[1 mark]

- (b) A student carried out an experiment to study the relationship between resistance and electric current. Diagram 8.1 shows the arrangement of apparatus for the experiment.

Seorang pelajar menjalankan satu eksperimen untuk mengkaji hubungan antara rintangan dan arus elektrik. Rajah 8.1 menunjukkan susunan radas eksperimen tersebut.

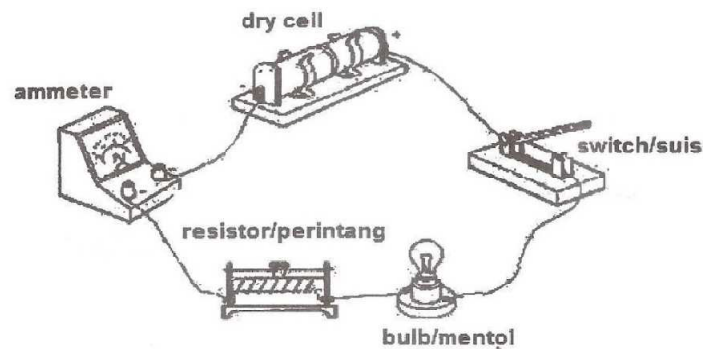


Diagram 8.1
Rajah 8.1

The procedure of experiment is as follows:
Prosedur eksperimen adalah seperti berikut:

Step 1 : Set up the circuit using 1 ohm resistor
Langkah 1: Pasangkan litar dengan menggunakan perintang 1 ohm

Step 2 : Close the switch and observe the brightness of the bulb and record the ammeter reading
Langkah 2: Tutup suis dan perhatikan kecerahan mentol dan rekod bacaan ammeter

Step 3 : Repeat step 2 with resistors of values 2 ohm, 5 ohm, 10 ohm and 12 ohm
Langkah 3: Ulangi langkah 2 dengan perintang 2 ohm 5 ohm, 10 ohm dan 12 ohm

- (i) State the variables involved in this experiment.
Nyatakan pemboleh ubah yang terlibat dalam eksperimen ini

Manipulated variable <i>Pemboleh ubah dimanipulasi</i>	
Responding variables <i>Pemboleh ubah bergerak balas</i>	
Constant variable <i>Pemboleh ubah dimalarkan</i>	

[3 marks]

- (ii) Diagram 8.2 shows the ammeter pointer when different resistors are connected to the electric circuit.

Rajah 8.2 menunjukkan penunjuk ammeter apabila perintang yang berlainan di sambungkan dalam litar elektrik.

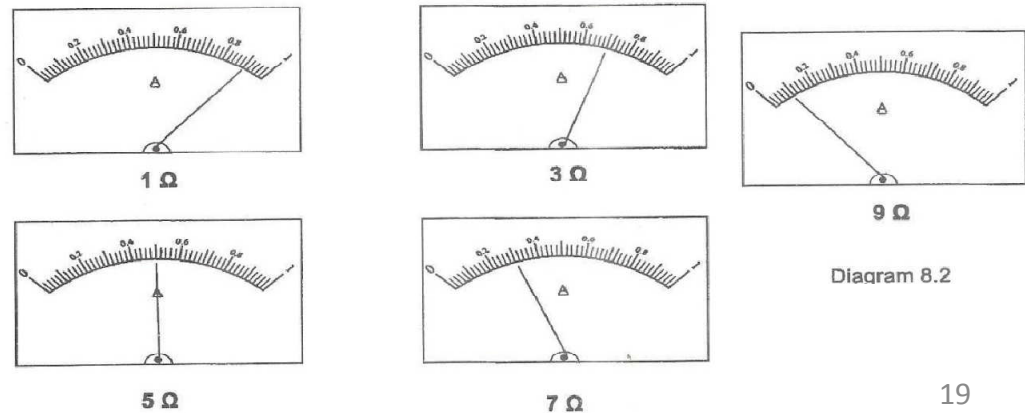


Diagram 8.2

Complete Table 8.2 by recording the reading of the ammeter as shown in Diagram 8.2.

Lengkapkan Jadual 8.2 dengan merekodkan bacaan ammeter seperti yang ditunjukkan dalam Rajah 8.2.

Resistance(ohm) Rintangan (ohm)	1	3	5	7	9
Ammeter reading A) Bacaan ammeter(A)	0.9	0.7	0.5		
Brightness of bulb Kecerahan lampu	Very bright Sangat cerah	Bright Cerah	Dim Malap	Slightly dim Sedikit malap	Very dim Sangat malap

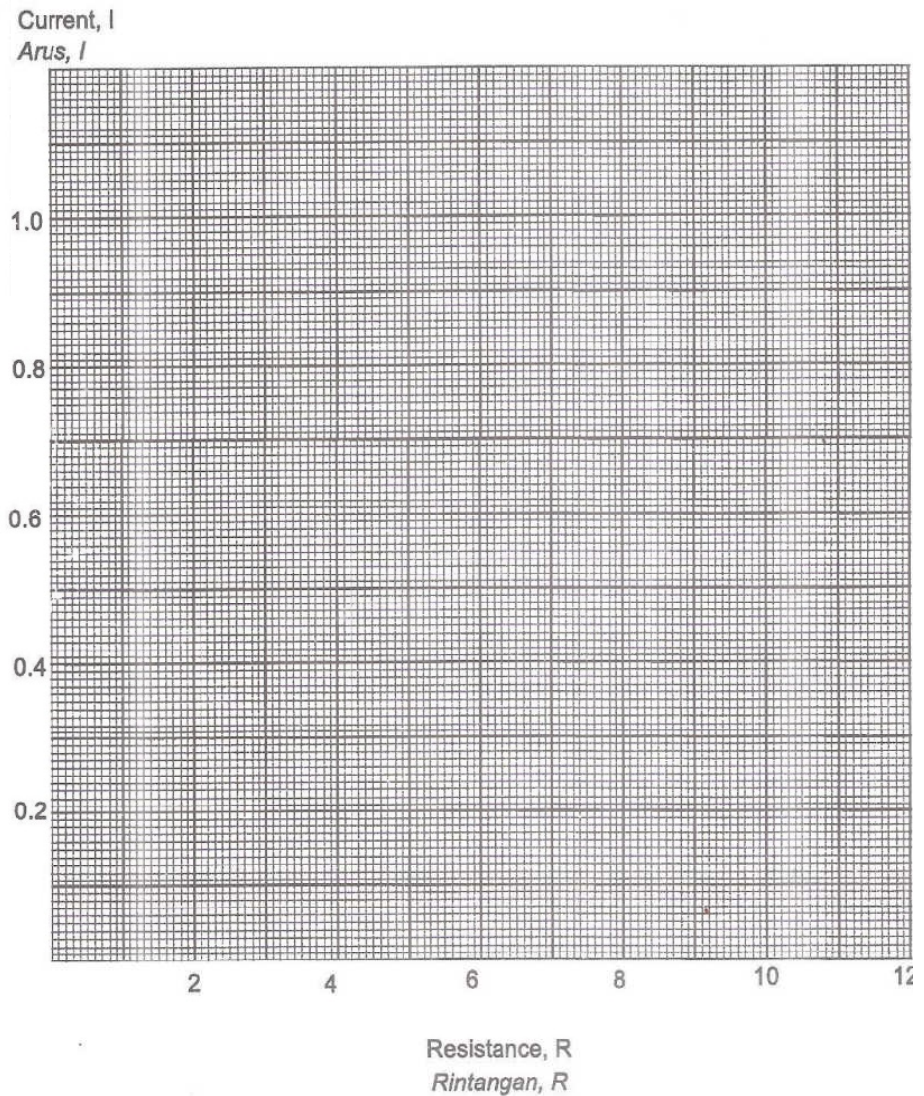
Table 8.2
Jadual 8.2

[2 marks]

Pahang

- (iii) Based on the reading in Table 8.2, draw a line graph of current, I against resistance, R .

Berdasarkan bacaan pada Jadual 8.2, lukiskan graf garisan bagi arus, I melawan rintangan, R .



- (iv) State the relationships between the resistance and the current.
Nyatakan hubungan antara rintangan dan arus.

.....
[1 mark]

- (v) Define operationally current.
Nyatakan definisi arus secara operasi.

.....
[1 mark]

Pulau Pinang

- 5 Diagram 5.1 shows a model of a simple transformer.
Rajah 5.1 menunjukkan satu model transformer ringkas.

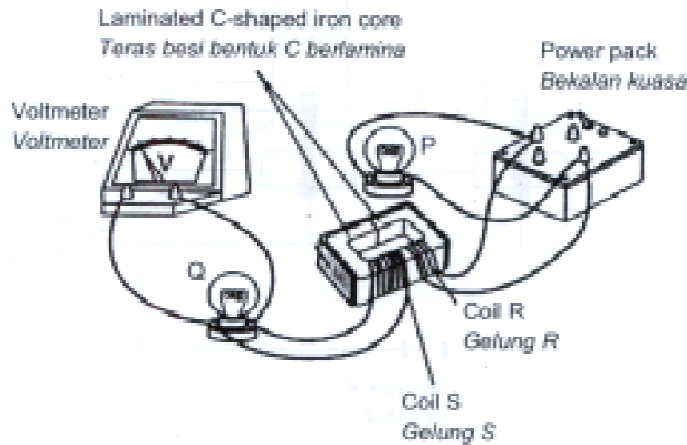


Diagram 5.1
Rajah 5.1

- (a) Which coil is the primary coil? Give a reason.
Gelung manakah merupakan gelung primer? Beri satu sebab.

Answer :
Jawapan

Reason :
Sebab

[2 marks]
[2 markah]

- (b) State the difference in the brightness of bulb P and Q in Diagram 5.1.
Nyatakan perbezaan dari segi kecerahan mentol P dan Q dalam Rajah 5.1.

[1 mark]
[1 markah]

- (c) What is measured by the voltmeter in Diagram 5.1?
Apakah yang diukur oleh voltmeter dalam Rajah 5.1?

[1 mark]
[1 markah]

- (d) Diagram 5.2 shows the electricity transmission and distribution system.
Rajah 5.2 menunjukkan sistem penghantaran dan pengagihan tenaga elektrik.

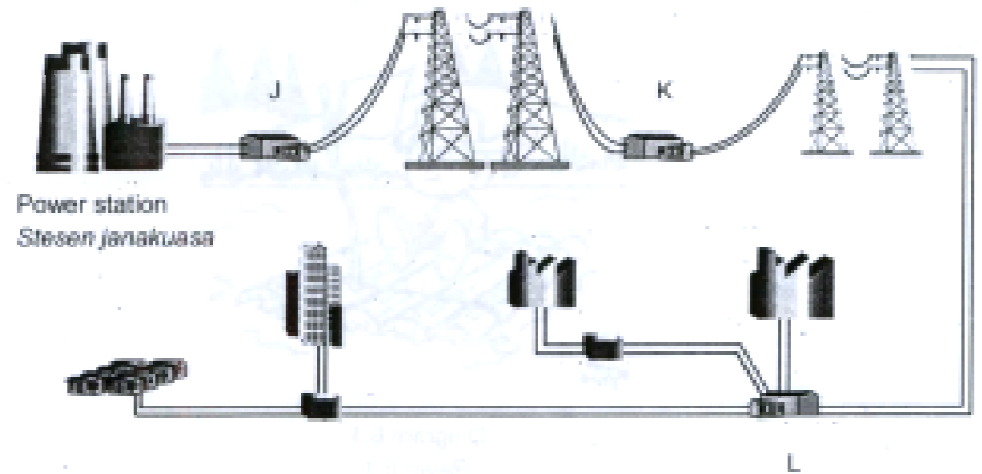


Diagram 5.2
Rajah 5.2

- (i) Circle J, K or L in Diagram 5.2 where the transformer in Diagram 5.1 is placed.
Bulatkan J, K atau L pada Rajah 5.2 di mana transformer dalam Rajah 5.1 diletakkan.

[1 mark]
[1 markah]

- (ii) Explain the importance of transformer in Diagram 5.1 to the system in Diagram 5.2.
Terangkan kepentingan transformer dalam Rajah 5.1 kepada sistem dalam Rajah 5.2.

[2 marks]
[2 markah]

- (e) State one advantage of the National Grid Network.
Nyatakan satu kelebihan Rangkaian Grid Nasional.

[1 mark]
[1 markah]

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

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

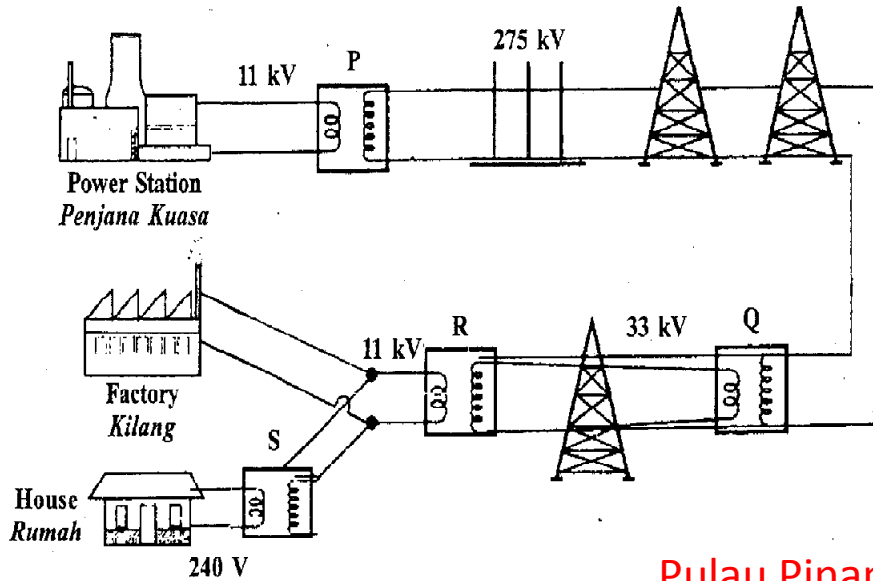


Diagram 8.1 / Rajah 8.1

Pulau Pinang

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

Step-up transformer Transformer injak-naik	Step-down transformer Transformer injak-turun

[2 marks]
 [2 markah]

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

Constant variable Pembolehubah dimalarkan	
Responding variable Pembolehubah bergerakbalas	

[2 marks]
 [2 markah]

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

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

Table 7.2 / Jadual 7.2

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

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

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

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

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

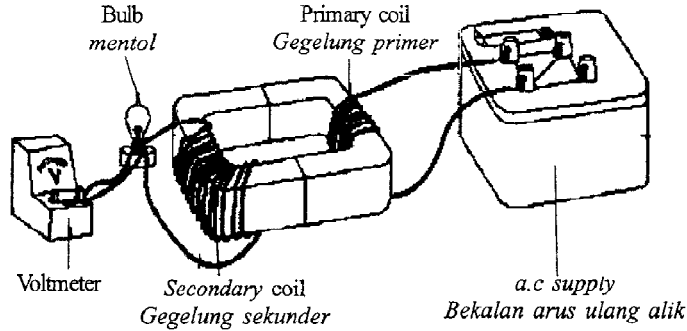


Diagram 8.3 / *Rajah 8.3*

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

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

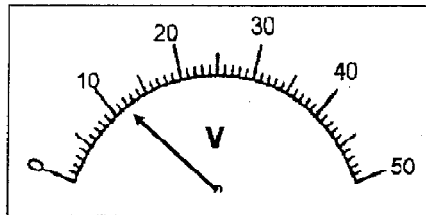


Diagram 8.4 / *Rajah 8.4*

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

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

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

Table 8.1 / *Jadual 8.1*

[1 mark]

Diagram 8.2 shows a transformer.
Rajah 8.2 menunjukkan sebuah transformer.

Pulau Pinang

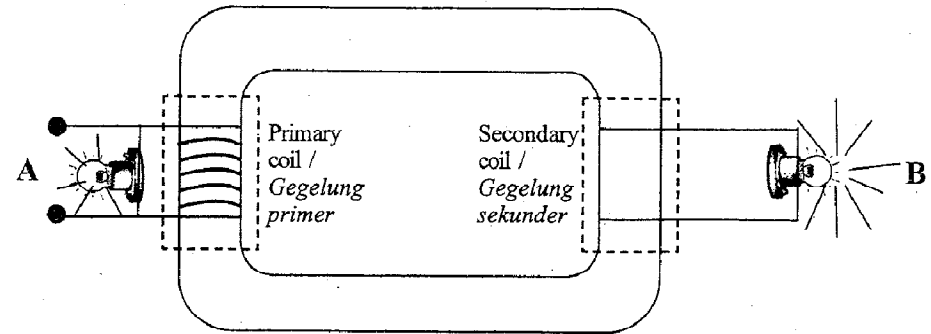


Diagram 8.2 / *Rajah 8.2*

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

.....

[1 mark]
 [1 markah]

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

.....

[1 mark]
 [1 markah]

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

.....

[1 mark]
 [1 markah]

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

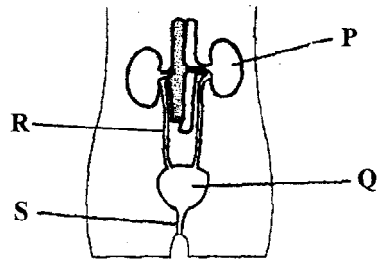


Diagram 4.1 / Rajah 4.1

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



[2 marks]
[2 markah]

Pulau Pinang

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

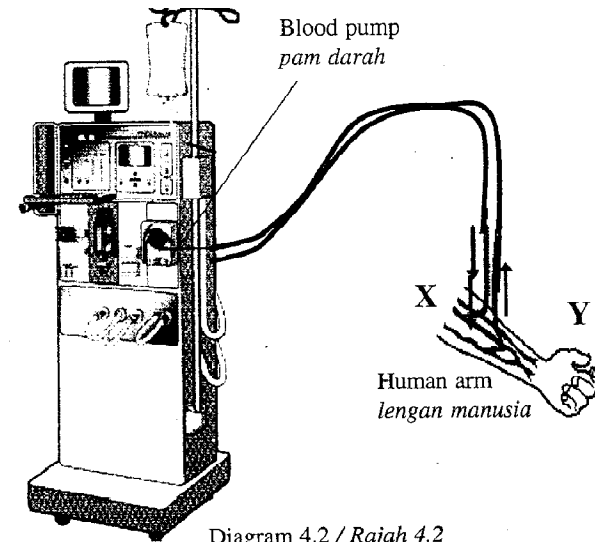


Diagram 4.2 / Rajah 4.2

- (i) Name the organ which needs this machine.
Namakan organ yang memerlukan mesin ini.
-
- [1 mark]
[1 markah]
- (ii) The patient in (b)(i) undergoes treatment with this machine.
State one difference between the blood content in tube X and tube Y.
Pesakit dalam (b)(i) menjalani rawatan dengan menggunakan mesin ini.
Nyatakan satu perbezaan di antara kandungan darah dalam tiub X dan tiub Y.
-
- [1 mark]
[1 markah]
- (c) A student's urine is tested in a laboratory using Benedict's Test. Brick red precipitate is formed. Explain.
Urin seorang pelajar telah diuji dalam makmal dengan menggunakan Ujian Benedict. Didapati mendakan merah bata terhasil. Terangkan.
-
-

[2 marks]
[2 markah]

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

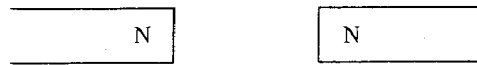


Diagram 5.1 / Rajah 5.1

Pulau Pinang

- (a) A piece of white paper is placed on the two magnets and some iron fillings are sprinkled on it.
Sehelai kertas putih diletakkan di atas magnet-magnet ini dan serbuk besi ditaburkan di atasnya.

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

[1 mark]
 [1 markah]

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

[1 mark]
 [1 markah]

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

[1 mark]
 [1 markah]

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

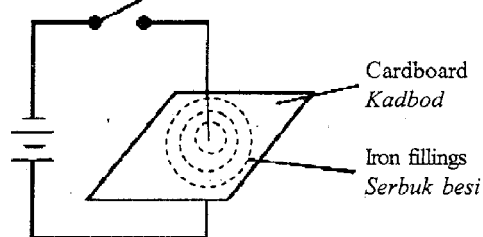


Diagram 5.2 / Rajah 5.2

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

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

[1 mark]
 [1 markah]

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

[1 mark]
 [1 markah]

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

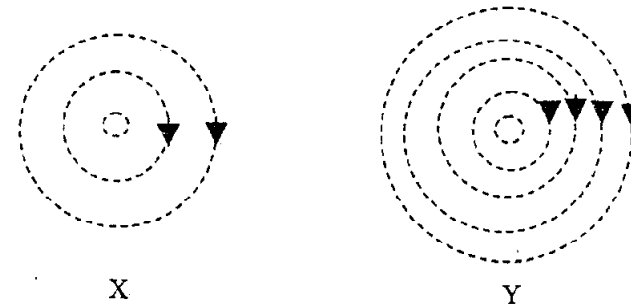


Diagram 5.3 / Rajah 5.3

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

[1 mark]
 [1 markah]

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

[1 mark]
 [1 markah]

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

[1 mark]
 [1 markah]

