

*For
Examiner's
Use*

Bahagian A
Section A

[60 markah]

[60 marks]

Jawab semua soalan di bahagian ini.

Answer all questions in this section.

- 1 Rajah 1 menunjukkan seorang cef pastri menghias krim putar ke atas sebiji kek cawan dengan mengenakan tekanan.

Diagram 1 shows a pastry chef decorating whipping cream on top of a cupcake by exerting pressure.



Rajah 1
Diagram 1

- (a) Apakah unit S.I bagi tekanan?

What is the S.I unit for pressure?

1(a)

1

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

- (b) Lengkapi ayat berikut dengan menggariskan pernyataan yang betul dalam kurungan.

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Underline the correct statement in the bracket to complete the following sentence.

Tekanan pada titik X
adalah
Pressure at point X is

{	lebih kecil daripada <i>smaller than</i> sama dengan <i>same as</i> lebih besar daripada <i>greater than</i>	}
---	---	---

tekanan pada titik Y.
pressure at point Y.

[1 markah]
[1 mark]

1(b)

	1
--	---

- (c) Berdasarkan pernyataan 1(b), nyatakan prinsip fizik yang terlibat.

Based on statement in 1(b), state the physics principle involved.

.....

[1 markah]
[1 mark]

1(c)

	1
--	---

- (d) Nyatakan satu aplikasi bagi prinsip yang dinyatakan dalam 1(c).

State one application of the principle stated in 1(c).

.....

[1 markah]
[1 mark]

1(d)

	1
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**Total
A1**

	4
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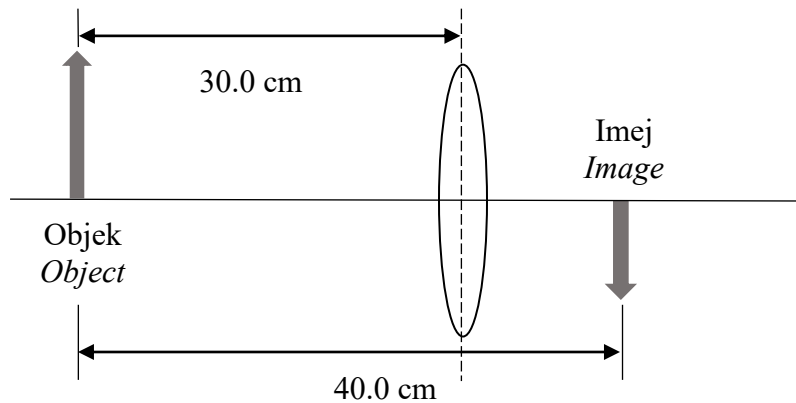
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- 2 Rajah 2 menunjukkan satu objek diletakkan 30.0 cm di hadapan sebuah kanta cembung dan membentuk imej nyata.

Diagram 2 shows an object is placed 30.0 cm in front of a convex lens and formed real image.



Rajah 2
Diagram 2

- (a) Apakah yang dimaksudkan dengan imej nyata?

What is the meaning of real image?

2(a)

1

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

- (b) Berdasarkan Rajah 2:

Based on Diagram 2:

- (i) Tentukan jarak imej, v .

Determine image distance, v .

2(b)(i)

1

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

- (ii) Hitung panjang fokus, f kanta cembung.
Calculate focal length, f of the convex lens.

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[2 markah]
[2 marks]

2(b)(ii)

2

- (c) Jika kanta dalam Rajah 2 digantikan dengan kanta berdiameter lebih besar, nyatakan perubahan yang berlaku kepada imej tersebut.

If the lens in Diagram 2 is replaced with a bigger diameter lens, state the change that occurs to the image.

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

2(c)

1

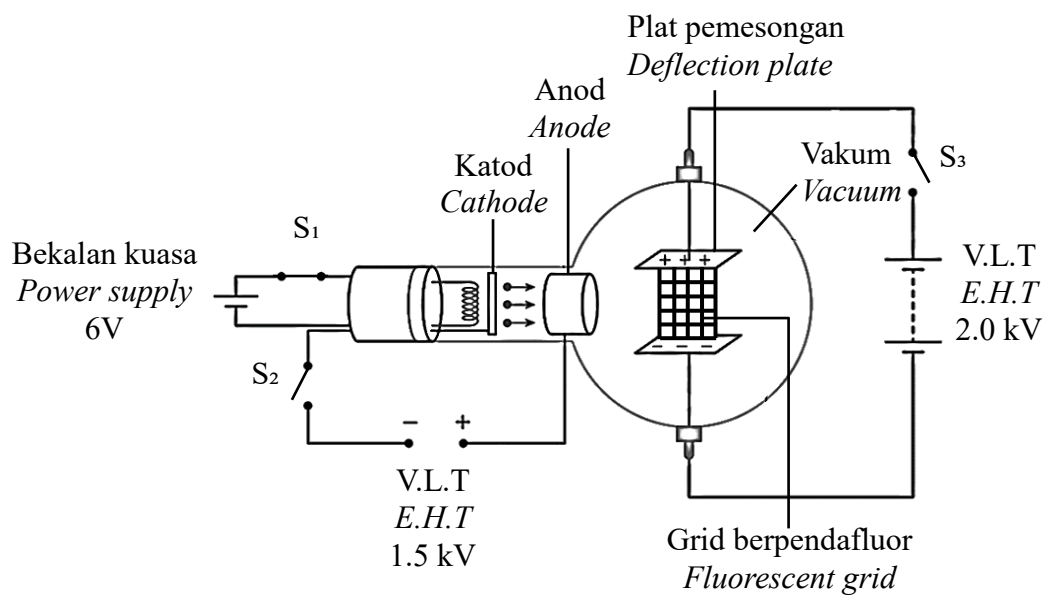
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A2**

5

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3 Rajah 3.1 menunjukkan sebuah tiub pemesongan.

Diagram 3.1 shows a deflection tube.



Rajah 3.1
Diagram 3.1

Apabila suis S_1 ditutup, elektron – elektron terpancar dari katod.

When switch S_1 is closed, electrons are emitted from the cathode.

(a) Namakan proses yang terlibat.

Name the process involved.

3(a)

	1
--	---

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

- (b) Apabila suis S_1 dan S_2 ditutup manakala suis S_3 dibuka, elektron – elektron bergerak ke anod.

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When switch S_1 and S_2 are closed while switch S_3 is opened, electrons move towards anode.

- (i) Hitungkan halaju maksimum elektron.

[Jisim elektron, $m = 9.11 \times 10^{-31}$ kg]

[Cas satu elektron, $e = 1.6 \times 10^{-19}$ C]

Calculate the maximum velocity of electron.

[Mass of an electron, $m = 9.11 \times 10^{-31}$ kg]

[Charge of an electron, $e = 1.6 \times 10^{-19}$ C]

3(b)(i)

[2 markah]
[2 marks]

	2

- (ii) Rajah 3.2 menunjukkan sinar katod dilalukan di antara plat pemesanan. Lengkapkan lintasan sinar katod tersebut.

Diagram 3.2 shows the path of cathode ray between deflection plates. Complete the path of the cathode ray.

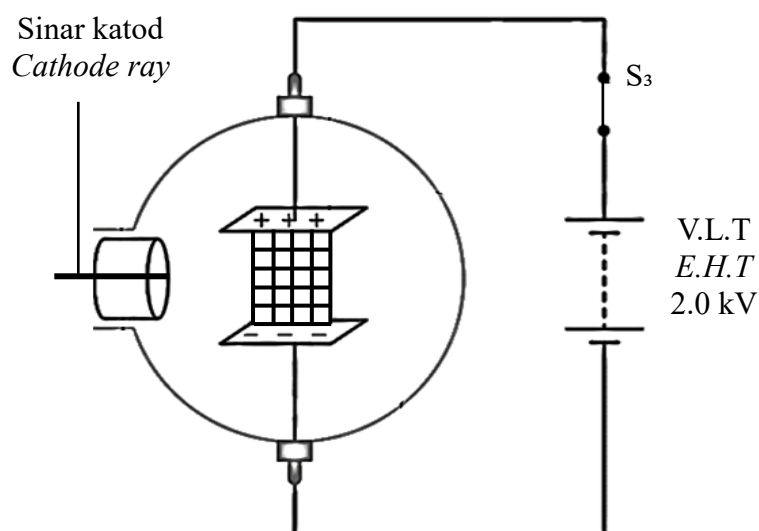


Diagram 3.2
Rajah 3.2

3(b)(ii)

[1 markah]
[1 mark]

	1

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3 (c)

2

- (c) Apakah yang berlaku kepada lintasan sinar katod apabila nilai V.L.T. dibesarkan? Berikan satu sebab.

*What happen to the path of cathode ray when the value of E.H.T increases?
Give a reason.*

.....

.....

[2 markah]

[2 marks]

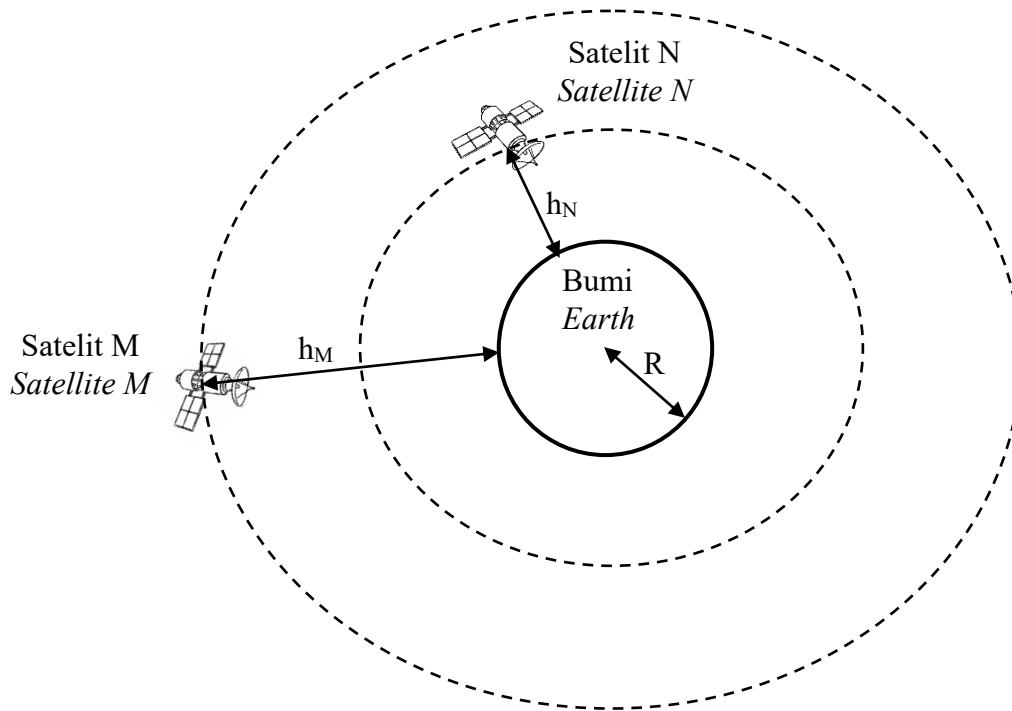
Total
A3

6

- 4 Rajah 4.1 menunjukkan dua satelit M dan N mengorbit bumi. Tempoh mengorbit, T bagi satelit-satelit boleh ditentukan dengan Hukum Kepler Ketiga.

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Diagram 4.1 shows two satellite M and N orbiting the earth. Orbital period of the satellites, T can be determined by Kepler's Third Law.



Rajah 4.1
Diagram 4.1

- (a) Nyatakan Hukum Kepler Ketiga.

State the Kepler's Third Law.

.....

.....

[1 markah]
[1 mark]

4(a)

4(a)
1

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- (b) Ketinggian satelit M, h_M dan ketinggian satelit N, h_N dari permukaan bumi adalah 3.6×10^7 m dan 2.0×10^7 m masing-masing. Tempoh mengorbit, T bagi satelit M adalah 24 jam.
[Jejari bumi, $R = 6.37 \times 10^6$ m]

The height of satellite M, h_M and the height of satellite N, h_N from the surface of the Earth are 3.6×10^7 m and 2.0×10^7 m respectively. Orbital period, T of satellite M is 24 hours.

[Radius of the Earth, $R = 6.37 \times 10^6$ m]

Tentukan:

Determine:

- (i) Jejari orbit bagi satelit M =

Radius of orbit for satellite M

Jejari orbit bagi satelit N =

Radius of orbit for satellite N

[2 markah]

[2 marks]

- (ii) Tempoh mengorbit, T bagi satelit N.

Orbital period, T for satellite N.

[2 markah]

[2 marks]

4(b)(i)

2

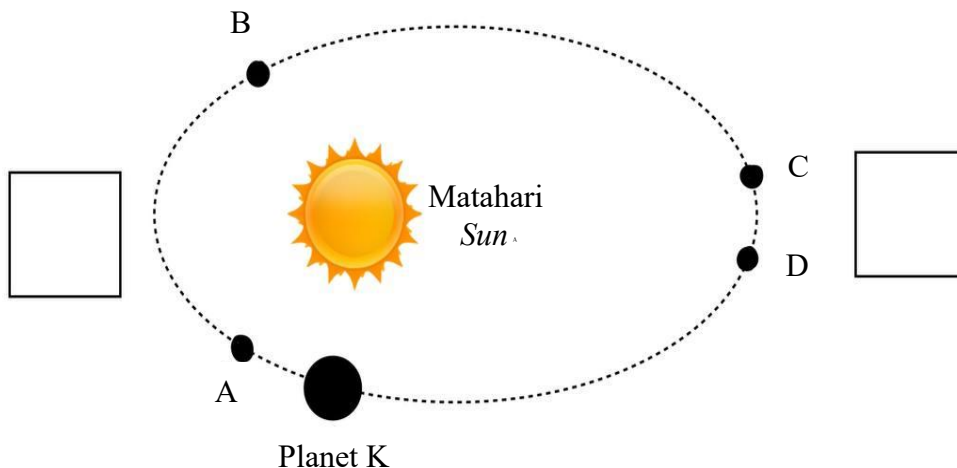
4(b)(ii)

2

- (c) Rajah 4.2 menunjukkan pergerakan Planet K mengorbit matahari.

Diagram 4.2 shows the motion of planet K orbiting the sun.

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Rajah 4.2
Diagram 4.2

- (i) Bandingkan jarak yang dilalui dari A ke B dan dari C ke D.

Compare the distance travel from A to B and from C to D.

.....

[1 markah]
[1 mark]

4(c)(i)

1

- (ii) Pada Rajah 4.2, labelkan di dalam kotak dengan menggunakan simbol X untuk kelajuan planet maksimum dan Y untuk kelajuan planet minimum.

In Diagram 4.2, label in the box using symbol X for planet with maximum velocity and Y for planet with minimum velocity.

[1 markah]
[1 mark]

4(c)(ii)

1

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4(c)(iii)

2

(iii) Terangkan jawapan anda dalam 4(c)(ii).

Explain your answer in 4(c)(ii).

.....

.....

[2 markah]

[2 marks]

**Total
A4**

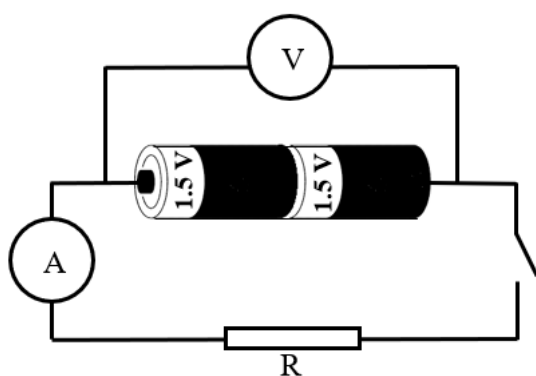
9

- 5 Rajah 5.1(a) dan Rajah 5.2(a) menunjukkan susunan dua bateri dalam litar bagi menentukan daya gerak elektrik (d.g.e).
Rajah 5.1(b) dan 5.2(b) menunjukkan graf beza keupayaan, V melawan arus, I bagi susunan bateri tersebut.

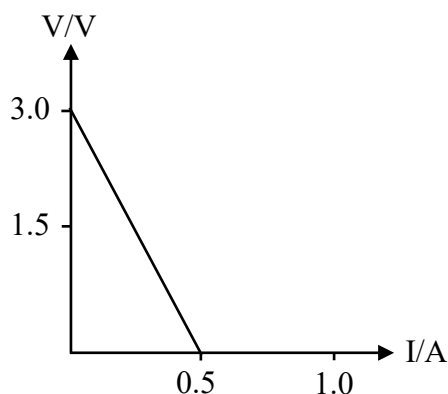
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Diagram 5.1(a) and Diagram 5.2(a) show arrangements of two batteries in a circuit to determine electromotive force (e.m.f).

Diagram 5.1(b) and Diagram 5.2(b) show the graphs of potential difference, V against current, I for arrangements of the batteries.

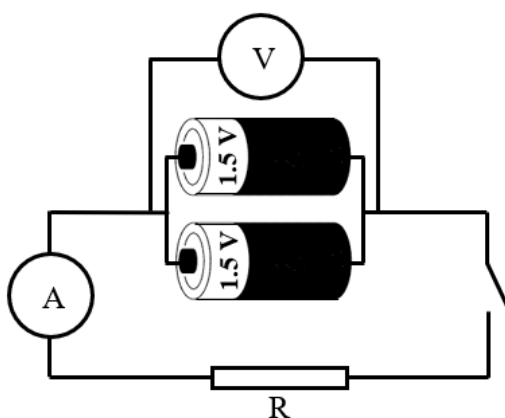


(a)

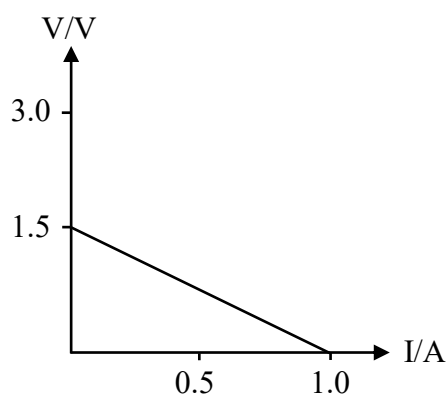


(b)

Rajah 5.1
Diagram 5.1



(a)



(b)

Rajah 5.2
Diagram 5.2

- (a) Apakah maksud 1.5 V yang dilabel pada bateri?

What is meant by 1.5 V labelled on the battery?

.....
.....

[1 markah]

[1 mark]

- (b) Berdasarkan Rajah 5.1 dan Rajah 5.2, bandingkan

Based on Diagram 5.1 and Diagram 5.2, compare

- (i) susunan bateri.

the arrangement of the batteries.

.....

[1 markah]

[1 mark]

- (ii) jumlah daya gerak elektrik (d.g.e) bateri.

the total electromotive force (e.m.f) of the batteries.

.....

[1 markah]

[1 mark]

- (iii) kecerunan graf.

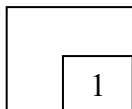
the gradient of the graph.

.....

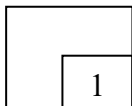
[1 markah]

[1 mark]

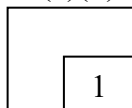
5(a)



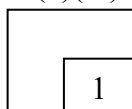
5(b)(i)



5(b)(ii)



5(b)(iii)



- (c) Nyatakan hubungan antara susunan bateri dan
State the relationship between the arrangement of the batteries and

- (i) jumlah daya gerak elektrik (d.g.e) bateri.
total electromotive force (e.m.f) of the batteries.

.....

[1 markah]
 [1 mark]

5(c)(i)

1

- (ii) kecerunan graf.
gradient of the graph.

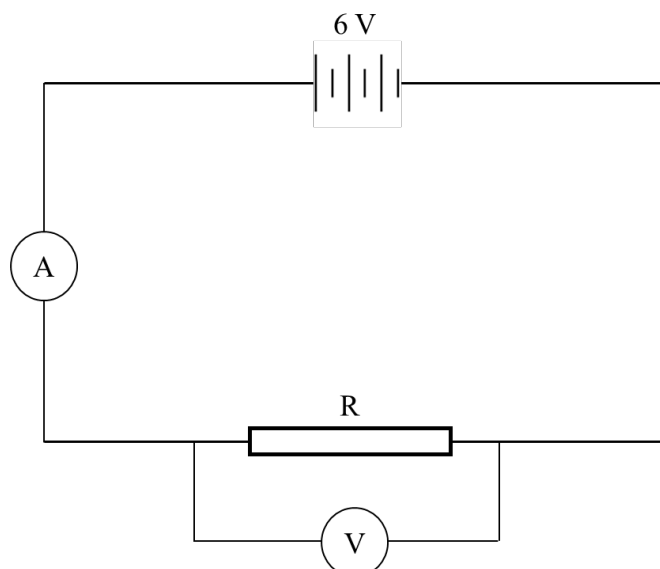
.....

[1 markah]
 [1 mark]

5(c)(ii)

1

- (d) Rajah 5.3 menunjukkan satu litar elektrik.
Diagram 5.3 shows an electrical circuit.



Rajah 5.3
 Diagram 5.3

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- (i) Jika arus yang mengalir dalam litar ialah 0.5 A dan beza keupayaan merentasi perintang, R ialah 5.8 V, hitung rintangan dalam, r bateri.

If the current flow in the circuit is 0.5 A and the potential difference across resistor, R is 5.8 V, calculate internal resistance, r of the battery.

5(d)(i)

2

[2 markah]
[2 marks]

- (ii) Jika litar di atas digunakan dalam jangka masa yang lama, apakah yang akan berlaku kepada nilai rintangan dalam, r bateri?

5(d)(ii)

1

If the above circuit is used for a longer time, what will happen to the value of internal resistance, r of the battery?

.....

[1 markah]
[1 mark]

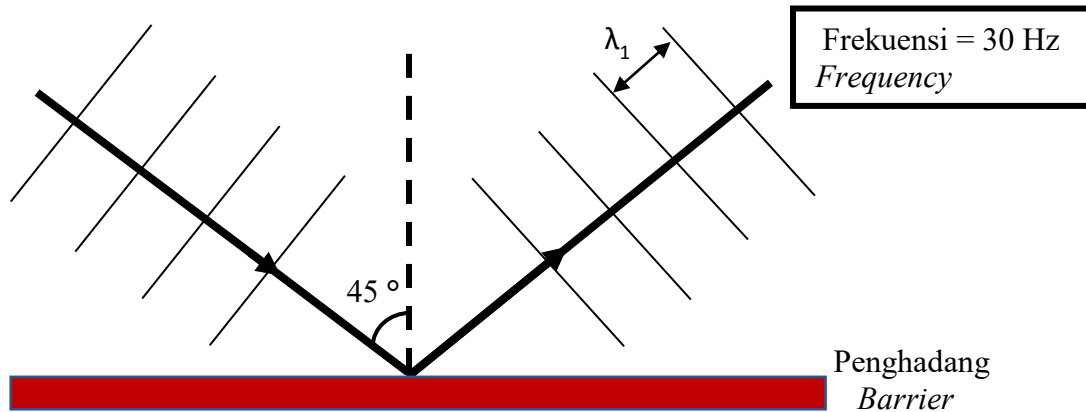
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9

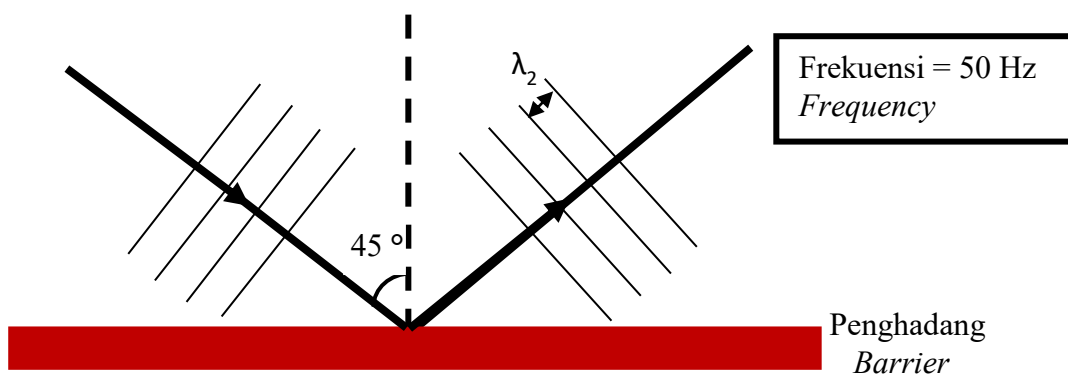
- 6 Rajah 6.1 dan Rajah 6.2 menunjukkan corak gelombang air dalam tangki riak dengan frekuensi penggetar yang berbeza.

Diagram 6.1 and Diagram 6.2 shows pattern of water waves in a ripple tank with vibrator of different frequencies.

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Rajah 6.1
Diagram 6.1



Rajah 6.2
Diagram 6.2

- (a) Gariskan jawapan yang betul untuk definisi gelombang melintang.

Underline the correct answer to define transverse waves.

Gelombang melintang ialah gelombang yang mana zarah-zarah medium bergetar pada arah yang (**berserenjang / selari**) dengan arah perambatan gelombang.

*Transverse wave is a wave which particles of the medium vibrate in the direction (**perpendicular / parallel**) to the direction of propagation of the wave.*

[1 markah]
[1 mark]

6(a)

6(a)
1

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6(b)(i)

	1

- (b) Bandingkan Rajah 6.1 dan Rajah 6.2 dari segi
Compare Diagram 6.1 and Diagram 6.2 in terms of

- (i) sudut tuju gelombang.
angle of incidence of waves.

.....

[1 markah]

[1 mark]

6(b)(ii)

	1

- (ii) panjang gelombang.
wavelength.

.....

[1 markah]

[1 mark]

6(b)(iii)

	1

- (iii) frekuensi gelombang.
frequency of waves.

.....

[1 markah]

[1 mark]

6(c)

	1

- (c) Hubungkan panjang gelombang dengan frekuensi gelombang.
Relate the wavelength and frequency of waves.

.....

[1 markah]

[1 mark]

6(d)

	1

- (d) Nyatakan fenomena gelombang yang terlibat.
Name the wave phenomenon involved.

.....

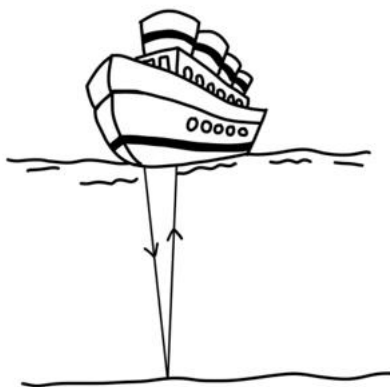
[1 markah]

[1 mark]

- (e) Rajah 6.3 menunjukkan sebuah kapal menggunakan gelombang ultrasonik bagi menentukan kedalaman dasar laut.

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Diagram 6.3 shows a ship using ultrasonic waves to determine the depth of seabed.



Rajah 6.3
Diagram 6.3

- (i) Beri satu sebab mengapa gelombang ultrasonik digunakan?

Give one reason why ultrasonic waves is used?

.....

[1 markah]
[1 mark]

6(e)(i)

1

- (ii) Kirakan panjang gelombang ultrasonik jika frekuensi 6.0×10^5 Hz digunakan.

[Kelajuan bunyi dalam air laut = 1500 m s^{-1}]

Calculate wavelength for ultrasonic waves if frequency of 6.0×10^5 Hz is used.

[Speed of sound in sea water = 1500 m s^{-1}]

[2 markah]
[2 marks]

6(e)(ii)

2

**Total
A6**

9

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7 Rajah 7 menunjukkan spektrum garis hidrogen.

Diagram 7 shows a hydrogen line spectrum.



Rajah 7
Diagram 7

Garis-garis berwarna yang terhasil mempunyai panjang gelombang, frekuensi dan kuantum tenaga yang tertentu.

Coloured lines formed have specific wavelength, frequency and quantum energy.

(a) Apakah maksud kuantum tenaga?

What is meant by quantum energy?

7(a)

	1
--	---

.....

[1 markah]

[1 mark]

(b) (i) Satu garis warna daripada spektrum garis atom hidrogen mempunyai panjang gelombang 486 nm. Tentukan tenaga foton bagi garis warna tersebut.

[Pemalar Planck, $h = 6.63 \times 10^{-34} \text{ J s}$]

[Halaju cahaya dalam vakum, $c = 3.00 \times 10^8 \text{ m s}^{-1}$]

A coloured line from line spectrum of hydrogen atom has a wavelength of 486 nm. Determine the photon's energy of the coloured line.

[Planck's constant, $h = 6.63 \times 10^{-34} \text{ J s}$]

[Speed of light in vacuum, $c = 3.00 \times 10^8 \text{ m s}^{-1}$]

7(b)(i)

	2
--	---

[2 markah]

[2 marks]

- (ii) Berdasarkan jawapan anda di 7(b)(i), jika bilangan foton yang terpancar ialah $3.37 \times 10^{18} \text{ s}^{-1}$, hitung kuasa output garis warna tersebut.

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Based on your answer in 7(b)(i), if the number of photons emitted is $3.37 \times 10^{18} \text{ s}^{-1}$, calculate the output power of the coloured line.

[1 markah]
[1 mark]

7(b)(ii)

1

- (c) Jadual 7 menunjukkan panel solar A, B dan C. Berdasarkan spesifikasi dalam Jadual 7, nyatakan ciri-ciri panel solar yang sesuai untuk menyerap banyak cahaya dan menukarkan kepada tenaga elektrik yang tinggi.

Table 7 shows solar panel A, B and C. Based on specification on Table 7, state the suitable characteristics of solar panel to absorb more light and convert to larger electrical energy.

Panel solar <i>Solar panel</i>	Fungsi kerja bahan yang digunakan <i>Work function of material used</i>	Luas permukaan <i>Surface area</i>
A	Kecil <i>Small</i>	Besar <i>Big</i>
B	Besar <i>Big</i>	Kecil <i>Small</i>
C	Besar <i>Big</i>	Besar <i>Big</i>

Jadual 7
Table 7

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- (i) Fungsi kerja bahan yang digunakan

Work function of material used

.....

Sebab

Reason

.....

[2 markah]

[2 marks]

- (ii) Luas permukaan

Surface area

.....

Sebab

Reason

.....

[2 markah]

[2 marks]

- (d) Berdasarkan jawapan dalam 7(c)(i) dan 7(c)(ii), pilih model panel solar yang paling sesuai.

Based on the answer in 7(c)(i) and 7(c)(ii), choose the most suitable solar panel.

.....

[1 markah]

[1 mark]

7(c)(i)

2

7(c)(ii)

2

7(d)

1

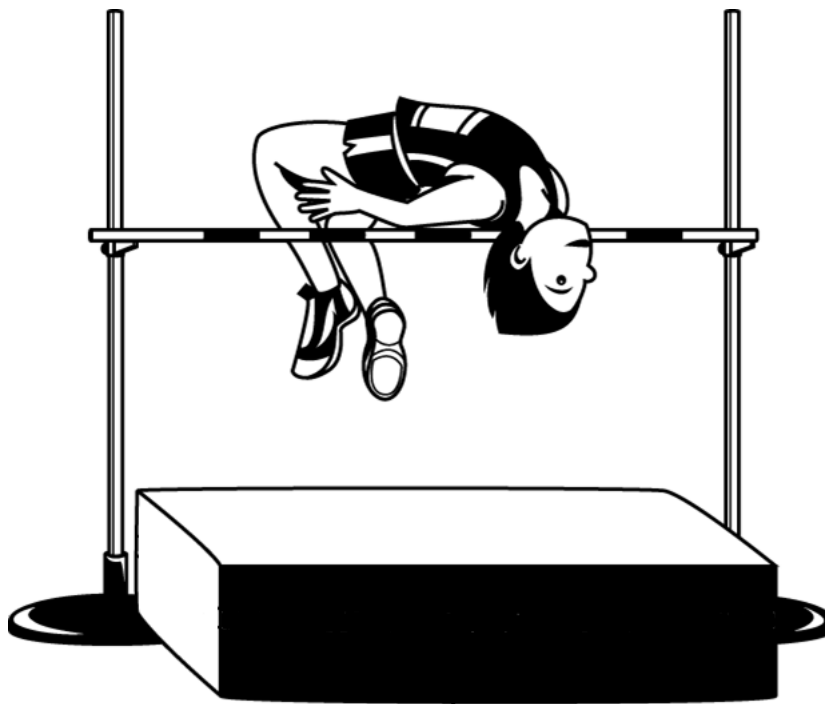
Total
A7

9

- 8 Rajah 8.1 menunjukkan seorang atlet dengan jisim 60 kg dalam acara lompat tinggi.

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Diagram 8.1 shows an athlete of mass 60 kg during high jump event.



Rajah 8.1
Diagram 8.1

- (a) Tandakan (✓) untuk jawapan yang betul dalam petak yang disediakan.

Tick (✓) for the correct answer in the box provided.

Daya impuls adalah

Impulsive force is

☐

kadar perubahan momentum
the rate of change of momentum

☐

perubahan momentum
change of momentum

8(a)

1

[1 markah]
[1 mark]

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- (b) Halaju atlet sejurus sebelum menyentuh tilam ialah 5 m s^{-1} dan masa impak ialah 0.8 s .
Kirakan daya impuls yang bertindak ke atas atlet.

The velocity of the athlete before touching the mattress is 5 m s^{-1} and time of impact is 0.8 s .

Calculate the impulsive force acting on the athlete.

8(b)

2

[2 markah]

[2 marks]

- (c) Cadangkan modifikasi yang boleh dibuat supaya atlet tidak mengalami sebarang kecederaan berdasarkan aspek-aspek tersebut:

Suggest modification that can be made so that the athlete would not injured based on the following aspect:

- (i) Ketebalan tilam

Thickness of the mattress

.....

Sebab:

Reason:

.....

8(c)(i)

2

[2 markah]

[2 marks]

- (ii) Bahan untuk tilam
Material of the mattress.

.....

Sebab:

Reason:

.....

[2 markah]
[2 marks]

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8 (c)(ii)

	2
--	---

- (iii) Luas permukaan tilam
Surface area of the mattress

.....

Sebab:

Reason:

.....

[2 markah]
[2 marks]

8 (c)(iii)

	2
--	---

**Total
A8**

	9
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Bahagian B
Section B

[20 markah]
[20 marks]

Bahagian ini mengandungi **dua** soalan. Jawab mana-mana **satu** soalan.
*This section consists of **two** questions. Answer any **one** question.*

- 9 Rajah 9.1 menunjukkan satu sampel batu igneous yang mengandungi Uranium-238 yang terperangkap semasa pembentukannya. Uranium-238 adalah unsur radioaktif yang mempunyai separuh hayat yang panjang. Kaedah tentumur Uranium-Plumbum digunakan untuk menentukan umur batu tersebut.

Diagram 9.1 shows an igneous rock sample containing Uranium-238 which trapped during its formation. Uranium-238 is a radioactive element with a long half-life. Uranium-Lead dating method is used to determine the age of this rock.

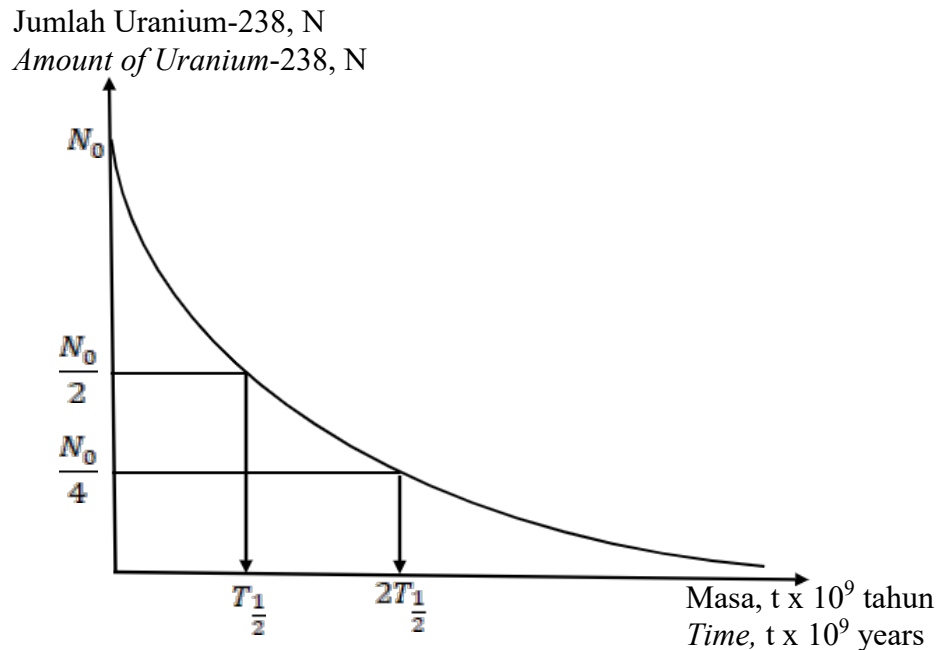


Rajah 9.1
Diagram 9.1

- (a) Apakah yang dimaksudkan dengan separuh hayat? [1 markah]
What is meant by half-life? [1 mark]

- (b) Rajah 9.2 menunjukkan lengkungan reputan Uranium-238 kepada Plumbum-206 yang stabil.

Diagram 9.2 shows a decay curve of Uranium-238 into stable Lead-206.



Rajah 9.2
Diagram 9.2

Berdasarkan Rajah 9.2, terangkan proses pereputan Uranium. [4 markah]

Based on Diagram 9.2, explain the Uranium decay process. [4 marks]

- (c) Separuh hayat Uranium-238 yang terperangkap dalam batu igneus ialah 4.5×10^9 tahun.

Half-life of trapped Uranium -238 in the igneous rock is 4.5×10^9 years.

- (i) Berapa lamakah yang diperlukan untuk Uranium-238 mereput menjadi 25% dari jumlah asal? [2 markah]

How long will it require for the Uranium-238 to decay to 25% from its original amount? [2 marks]

- (ii) Pada permulaan pembentukan batu igneous tersebut, tiada unsur Thorium-234 yang terperangkap dikesan. Jika Uranium-238 mereput menjadi Thorium-234 dan peratus Thorium-234 yang dikesan adalah 0.73%, andaikan umur batu tersebut. [3 markah]

In early formation of the igneous rocks, there was no traces of Thorium-234 element trapped in it. If Uranium-238 decays to Thorium-234 and the percentage of Thorium-234 found in the rock is 0.73%, estimate the age of the rocks. [3 marks]

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- (d) Beberapa batuan ditemui di kawasan gunung berapi mengandungi Argon-40 yang mereput dan membentuk Kalium-40. Jadual 1 menunjukkan ciri-ciri empat jenis batuan P, Q, R dan S.

Several rocks were discovered at a volcanic site which contains Argon-40 which decays and forms Potassium-40. Table 1 shows the characteristics of four rocks P, Q, R and S.

Rocks <i>Batuan</i>	Kuantiti Argon <i>Quantity of Argon</i>	Kuantiti Kalium <i>Quantity of Potassium</i>	Nisbah Kalium kepada Argon <i>Ratio of Potassium to Argon</i>	Aktiviti radioaktif <i>Radioactive activity</i>
P	Tinggi <i>High</i>	Rendah <i>Low</i>	Rendah <i>Low</i>	Tinggi <i>High</i>
Q	Rendah <i>Low</i>	Tinggi <i>High</i>	Tinggi <i>High</i>	Rendah <i>Low</i>
R	Rendah <i>Low</i>	Tinggi <i>High</i>	Rendah <i>Low</i>	Rendah <i>Low</i>
S	Tinggi <i>High</i>	Rendah <i>Low</i>	Tinggi <i>High</i>	Tinggi <i>High</i>

Jadual 1
Table 1

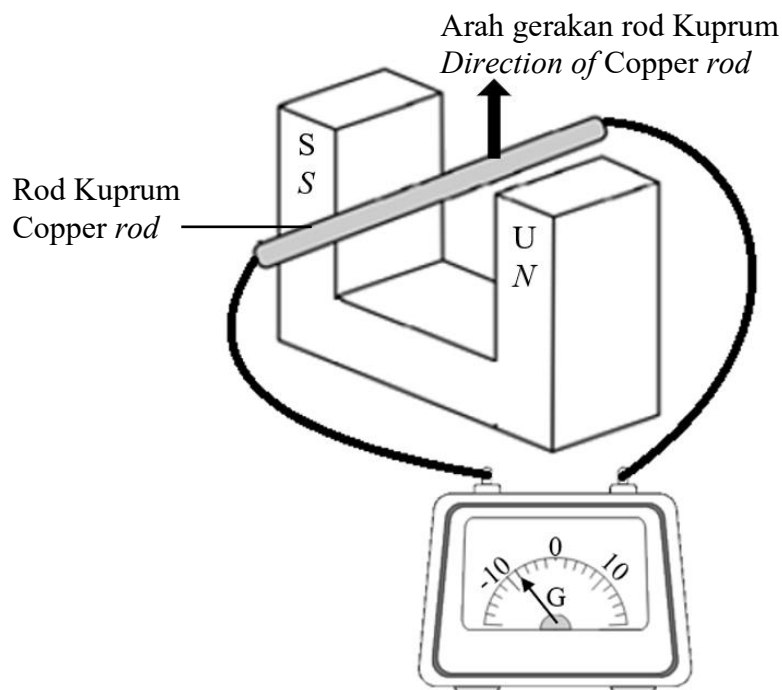
Berdasarkan maklumat yang diberi, anda dikehendaki menentukan batuan yang paling purba. Beri sebab untuk pilihan anda.

Based on the information given, you are required to determine the most ancient rock. Give reasons for your choice.

[10 markah]
[10 marks]

- 10 Rajah 10.1 menunjukkan satu rod Kuprum disambungkan kepada galvanometer berpusat sifar. Rod Kuprum digerakkan ke atas di antara dua magnet Magnadur dengan kutub bertentangan.

Diagram 10.1 shows a Copper rod connected to a centre-zero galvanometer. The Copper rod is moved upwards between the two Magnadur magnets that are of opposite poles.

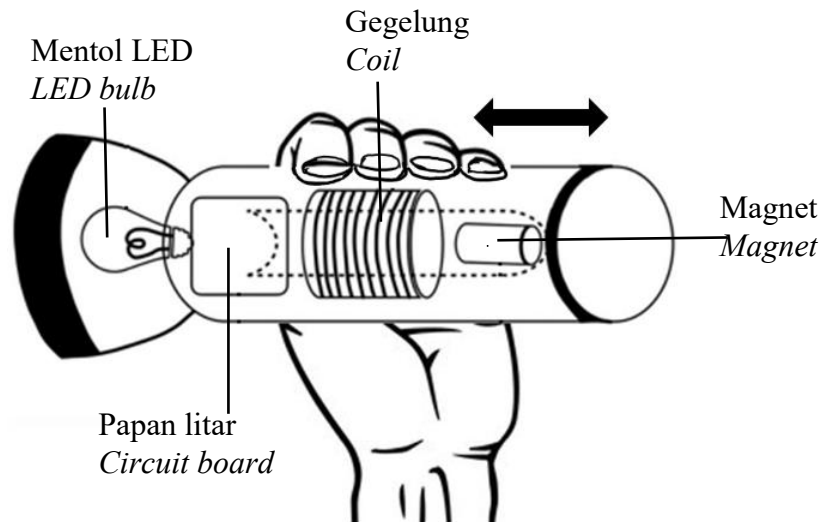


Rajah 10.1
Diagram 10.1

- (a) (i) Namakan konsep fizik yang terlibat dalam Rajah 10.1. [1 markah]
Name the physics concept involved in Diagram 10.1. [1 mark]
- (ii) Nyatakan **satu** faktor yang mempengaruhi pesongan jarum penunjuk galvanometer. [1 markah]
*State **one** factor which affect the deflection of galvanometer pointer.* [1 mark]

- (b) Rajah 10.2 menunjukkan lampu suluh aruhan LED. Mentol LED menyala bila lampu suluh digoncang secara mendatar.

Diagram 10.2 shows an induction LED torch light. The LED bulb lights up when the torch light is shaken horizontally.



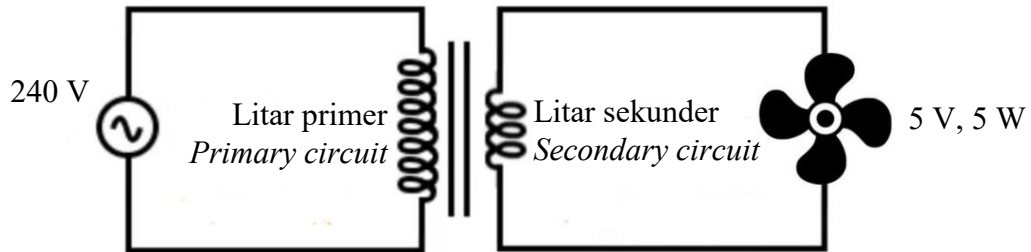
Rajah 10.2
Diagram 10.2

Terangkan bagaimana mentol LED menyala dengan lebih lama. [3 markah]

Explain how the LED bulb lights up for a longer time. [3 marks]

- (c) Rajah 10.3 menunjukkan litar suatu transformer yang digunakan untuk mengecas sebuah kipas mudah alih.

Diagram 10.3 shows a circuit of transformer used to charge a portable fan.



Rajah 10.3
Diagram 10.3

- (i) Berapakah nisbah bilangan lilitan primer, N_p kepada bilangan lilitan sekunder, N_s ? [2 markah]

What is the ratio of number of turns of primary coil, N_p to number of turns of secondary coil, N_s ? [2 marks]

- (ii) Hitung arus sekunder. [2 markah]

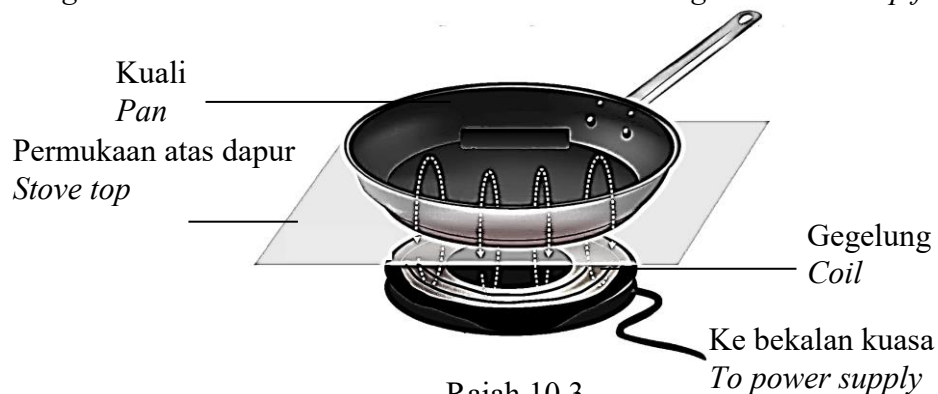
Calculate the secondary current. [2 marks]

- (iii) Jika transformer ini adalah unggul, berapakah nilai kuasa input? [1 markah]

If the transformer is an ideal transformer, what is the value of the input power? [1 mark]

- (d) Rajah 10.4 menunjukkan dapur aruhan yang mengambil masa yang lama untuk memanaskan makanan.

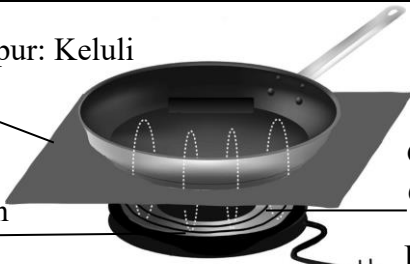
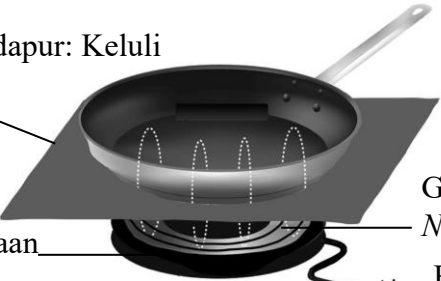
Diagram 10.4 shows an induction cooker takes a long time to heat up food.



Rajah 10.3
Diagram 10.3

Jadual 2 menunjukkan empat jenis dapur aruhan K, L, M dan N.

Table 2 shows the characteristics of four induction cooker K, L, M and N.

K	Permukaan atas dapur: Seramik <i>Stove top: Ceramic</i>  Kadar pengoksidaan gegelung: Rendah <i>Coil oxidation rate: Low</i> Gegelung Nikrom <i>Nichrome coil</i> Bekalan kuasa <i>Power supply</i>
L	Permukaan atas dapur: Keluli <i>Stove top: Steel</i>  Kadar pengoksidaan gegelung: Tinggi <i>Coil oxidation rate: High</i> Gegelung Kuprum <i>Copper coil</i> Bekalan kuasa <i>Power supply</i>
M	Permukaan atas dapur: Seramik <i>Stove top: Ceramic</i>  Kadar pengoksidaan gegelung: Rendah <i>Coil oxidation rate: Low</i> Gegelung Kuprum <i>Copper coil</i> Bekalan kuasa <i>Power supply</i>
N	Permukaan atas dapur: Keluli <i>Stove top: Steel</i>  Kadar pengoksidaan gegelung: Tinggi <i>Coil oxidation rate: High</i> Gegelung Nikrom <i>Nichrome coil</i> Bekalan kuasa <i>Power supply</i>

Jadual 2
Table 2

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SULIT

Anda dikehendaki menentukan dapur aruhan yang paling sesuai untuk memanaskan makanan dengan cepat daripada aspek yang berikut:

You are required to determine the most suitable induction cooker to heat up the food faster from the following aspects:

- Bahan permukaan atas dapur
Material of stove top
- Bahan gegelung
Material of coil
- Kadar pengoksidaan gegelung
Coil oxidation rate
- Bekalan kuasa
Power supply

Terangkan kesesuaian aspek-aspek itu dan tentukan dapur aruhan yang paling sesuai. Beri sebab untuk pilihan anda.

Explain the suitability of the aspects and determine the most suitable induction cooker. Give reasons for your choice.

[10 markah]
[10 marks]

Bahagian C
Section C

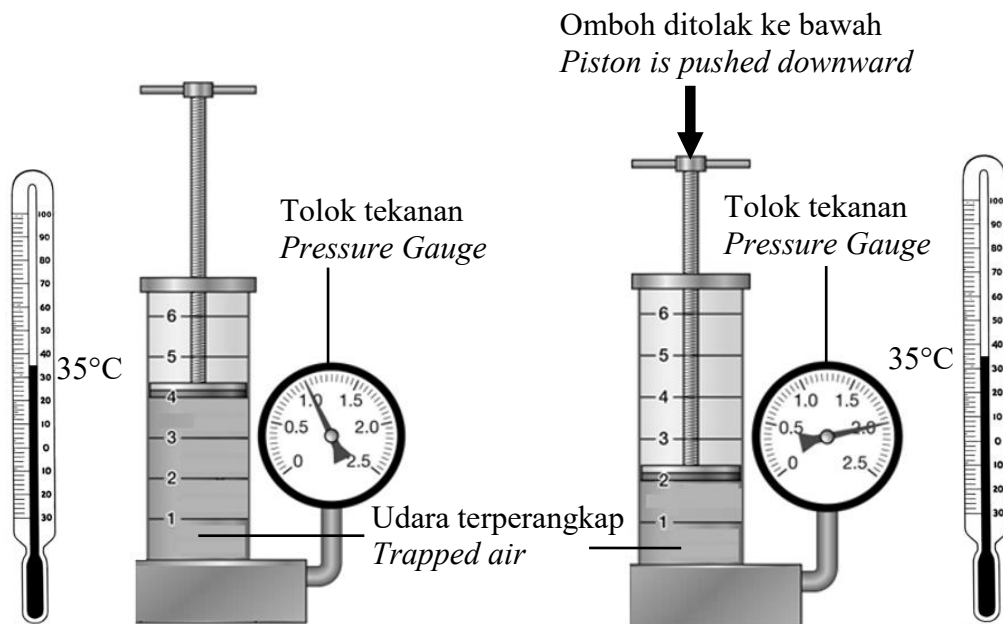
[20 markah]

[20 marks]

Soalan ini **mesti** dijawab.*Answer the question.*

- 11 Rajah 11.1(a) dan Rajah 11.1(b) menunjukkan susunan radas satu eksperimen untuk menentukan hubungan antara isipadu udara yang terperangkap dengan tekanan yang dikenakan ke atasnya.

Diagram 11.1(a) and Diagram 11.1(b) show the arrangement of apparatus of an experiment to determine the relationship between the volume of trapped air and pressure that is exerted on it.



Rajah 11.1(a)
Diagram 11.1(a)

Rajah 11.1(b)
Diagram 11.1(b)

- (a) Apakah yang dimaksudkan dengan tekanan?

[1 markah]

What is meant by pressure?

[1 mark]

- (b) Perhatikan Rajah 11.1(a) dan Rajah 11.1(b), bandingkan isipadu udara yang terperangkap, bacaan tolok tekanan dan bacaan termometer. Hubungkan isipadu udara terperangkap dan tekanan yang dikenakan. Seterusnya namakan hukum fizik yang terlibat. [5 markah]

Observe Diagram 11.1(a) and Diagram 11.1(b), compare the volume of trapped air, the reading of the pressure gauge and the reading of the thermometer.

Relate the volume of trapped air and the pressure exerted.

Hence name the physics law involved.

[5 marks]

- (c) Rajah 11.2 menunjukkan seorang budak lelaki sedang memanaskan badannya.

Diagram 11.2 shows a boy warming up his body.



Rajah 11.2
Diagram 11.2

Menggunakan pengetahuan anda tentang pemindahan haba, terangkan situasi di atas. [4 markah]

Using your knowledge on heat transfer, explain the above situation.

[4 marks]

- (d) Rajah 11.3 menunjukkan seorang penunggang motosikal menghantar makanan.

Diagram 11.3 shows a motorcyclist delivering food.



Rajah 11.3
Diagram 11.3

Beg penghantaran makanan dalam Rajah 11.3 tidak kedap panas. Anda dikehendaki mengubahsuai beg penghantaran makanan tersebut dari segi bahan lapisan dalam dan luar beg, jisim beg dan aspek-aspek lain yang boleh mengekalkan kepanasan makanan yang dihantar.

The food delivery bag in Diagram 11.3 is non-heat insulator. You are required to modify the food delivery bag in terms of inner and outer layer, mass of the bag and other aspects which can maintain the hotness of the delivered food.

[10 markah]

[10 marks]

KERTAS PEPERIKSAAN TAMAT

END OF QUESTION PAPER