

SECTION A
[20 marks]

Answer all questions in this section
The time suggested to answer this question is 60 minutes

1. Diagram 1.1 shows an experiment to study the reactivity of metals with dilute hydrochloric acid.
Rajah 1.1 menunjukkan satu eksperimen untuk mengkaji kereaktifan logam dengan asid hidroklorik cair.

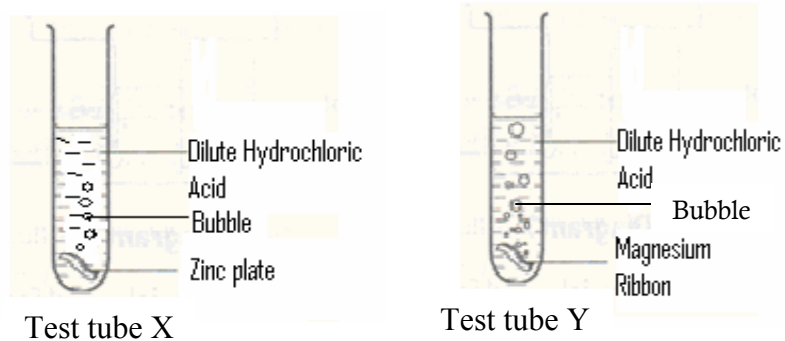


DIAGRAM 1.1

- (a) Write one observation based on Diagram 1.1
Tuliskan satu pemerhatian berdasarkan Rajah 1.1

[1 mark]

- (b) Write one inference for your observation in (a)
Tuliskan satu inferens kepada pemerhatian di (a)

[1 mark]

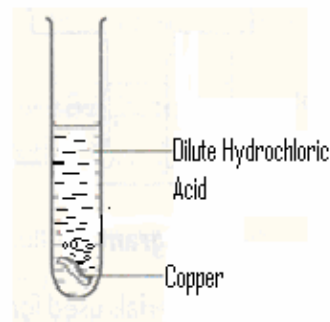


DIAGRAM 1.2

- (c) Based on the Diagram 1.2, predict the position of copper in the reactivity series of metals.
Berdasarkan Rajah 1.2, ramalkan kedudukan kuprum dalam siri kereaktifan logam

[1 mark]

- (d) What is the responding variable in the above experiment?
Apakah pembolehubah bergerakbalas dalam eksperimen di atas?

[1 mark]

- (e) What is the operational definition for **reactivity of metal** in this experiments?
*Apakah definisi secara operasi bagi **kereaktifan logam** pada eksperimen ini?*

[1 mark]

2. Diagram 2 shows the arrangement of the apparatus in an experiment to study the bacterial growth in different condition.
Rajah 2 menunjukkan susunan radas bagi eksperimen untuk mengkaji pertumbuhan bacteria dalam keadaan yang berlainan.

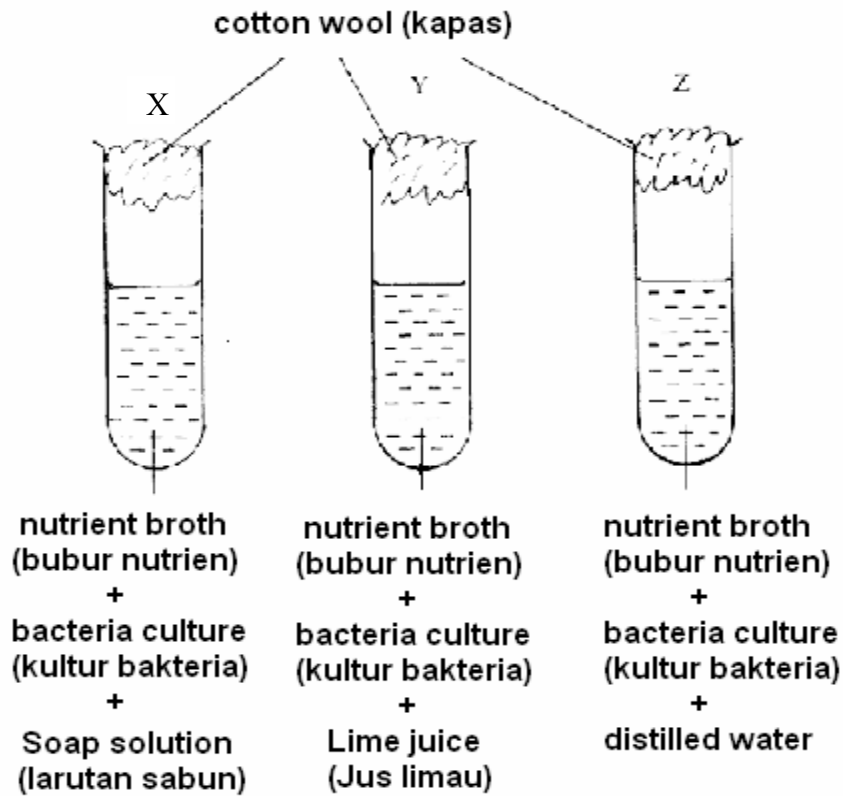


DIAGRAM 2

The arrangement of apparatus is kept in an incubator at 37°C for 2 days. Table 2.1 shows the observation of this experiment.
Susunan radas itu disimpan dalam inkubator pada 37°C selama 2 hari. Jadual 2.1 menunjukkan hasil pemerhatian eksperimen itu.

Test tube (<i>tabung uji</i>)	Observation (<i>pemerhatian</i>)
X	No change (<i>tiada perubahan</i>)
Y	Slightly cloudy (<i>keruh sedikit</i>)
Z	Cloudy (<i>keruh</i>)

TABLE 2.1

- (a) Write down one inference based on the observation for test tube Z in Table 2.1
Tuliskan satu inferens berdasarkan pemerhatian bagi tabung uji Z dalam Jadual 2.1

..... [1 mark]

- (b) State the variables in this experiment:
Nyatakan pemboleh ubah dalam eksperimen itu:

(i) Manipulated variable/ *pembolehubah dimanipulasi*

(ii) Constant variable/ *pembolehubah dimalarkan*

..... [2 marks]

- (c) Tick (✓) in Table 2.2 which shown the properties of solution in each test-tube.
Tandakan (✓) dalam Jadual 2.2 untuk menunjukkan sifat larutan yang terkandung dalam setiap tabung uji.

Properties of solution (<i>Sifat larutan</i>) Test tube (<i>Tabung uji</i>)	Acidic (<i>Asid</i>)	Alkaline (<i>alkali</i>)	Neutral (<i>neutral</i>)
X			
Y			
Z			

TABLE 2.2

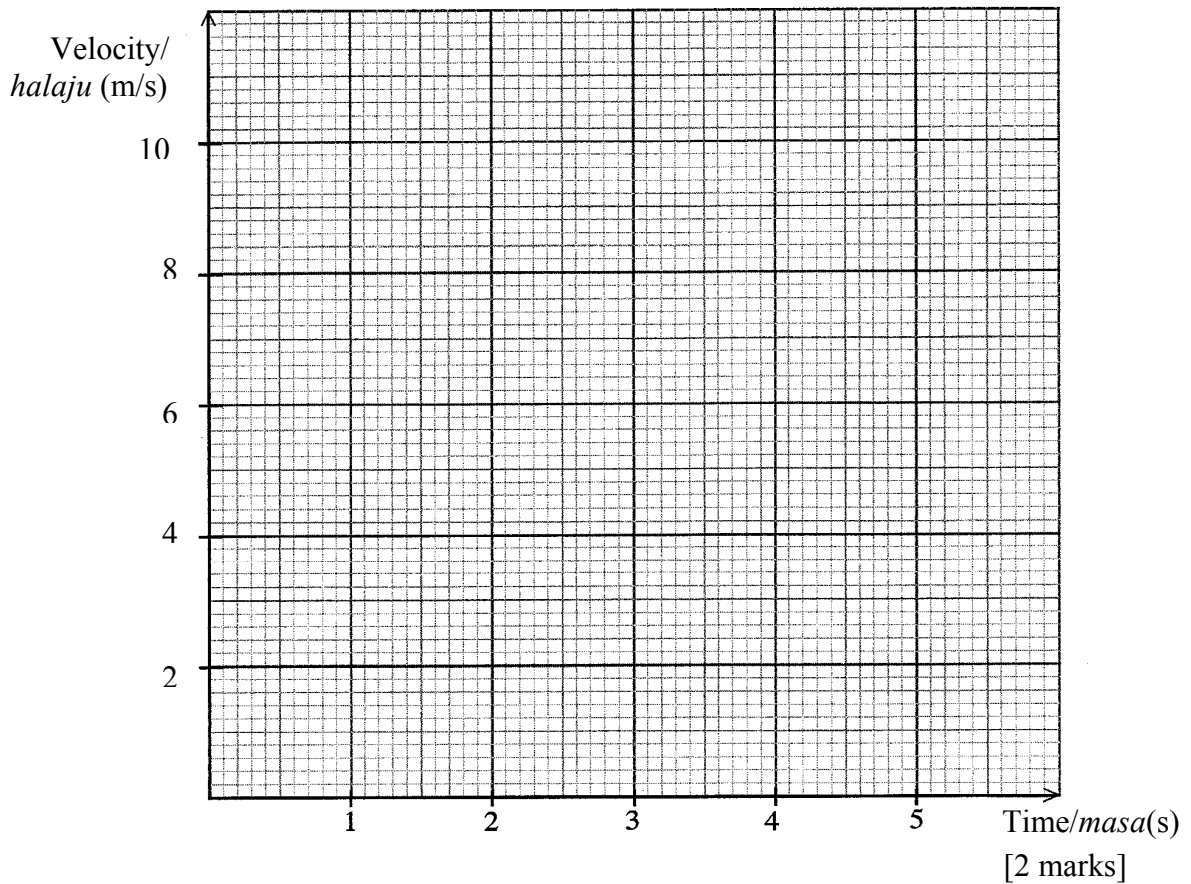
[2 marks]

- 3 In an experiment, the velocity of a toy car is recorded in Table 3.
Di dalam satu eksperimen, halaju kereta mainan telah direkodkan dalam Jadual 3

Time/masa(s)	Velocity/halaju (m/s)
0	0
1	3
2	6
3	8
4	9
5	9

Table 3 /Jadual 3

- (a) Using the data in Table 3, draw a graph of velocity against time.
Dengan menggunakan data dalam jadual 3, lukis graf halaju melawan masa.



- (b) Based on the graph in (a), what is the relationship of time and velocity on the first 3 minutes?
Berdasarkan graf di (a), apakah hubungan antara masa dan halaju pada 3 minit pertama?
-

[1 mark]

- (c) Based on the graph in (a), what is the velocity of the toy car at 2.5 seconds?

Berdasarkan graf di (a), apakah halaju kereta mainan pada masa 2.5 saat?

.....ms⁻¹

[1 mark]

- (d) State the hypothesis of this experiment.

Nyatakan hipotesis dalam eksperimen ini.

.....
[1 mark]

- 4 Diagram 3 shows three bottles of water samples P, Q and R taken from three different areas. Then, the precipitation of each water sample is determined and recorded in Table 4.

Rajah 3 menunjukkan tiga botol sample air P, Q dan R yang diambil daripada tiga kawasan yang berbeza. Kemudian enapan di dalam air setiap botol ditentukan dan direkodkan dalam Jadual 4.

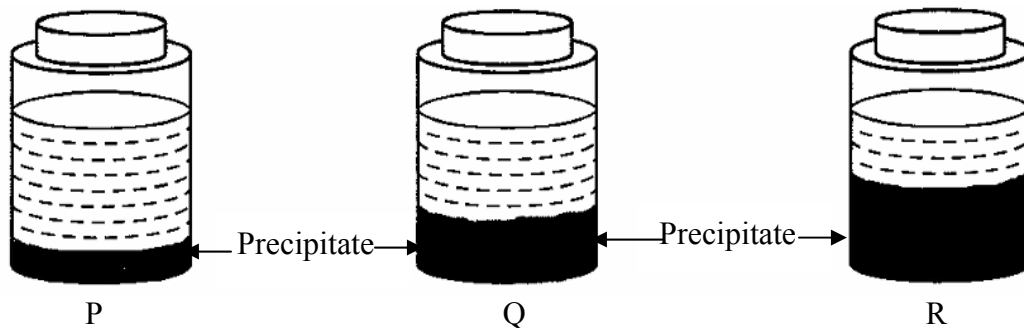


DIAGRAM 3

Area of water sample/ <i>kawasan sampe air</i>	Height of precipitation/ <i>Ketinggian enapan / (cm)</i>
P	
Q	
S	

TABLE 4

- (a) Measure the height of precipitation in the bottle of P, Q and R and record it in the table.

Ukur ketinggian enapan di dalam botol P, Q dan R dan rekodkan dalam jadual. [1 mark]

- (b) Based on the height of precipitation, which is the most polluted area?

Berdasarkan ketinggian enapan, kawasan manakah yang paling tercemar?

.....
[1 mark]

- (c) State the operational definition of water pollution.
Nyatakan definisi secara operasi bagi pencemaran air.

.....
[1 mark]

- (d) State the variables in this investigation:
Nyatakan pembolehubah dalam kajian ini:

- (i) Manipulated variable.
Pembolehubah dimanipulasi.

.....
[1 mark]

- (ii) Responding variable.
Pembolehubah bergerakbalas.

.....
[1 mark]

Section B

[30 marks]

Answer all questions in this section

The time suggested to complete this section is 50 minutes

Jawab semua soalan di bahagian ini.

Masa yang dicadangkan untuk bahagian ini ialah 50 minit.

- 5 Diagram 4 shows the structure of a camera.
Rajah 4 menunjukkan struktur sebuah kamera.

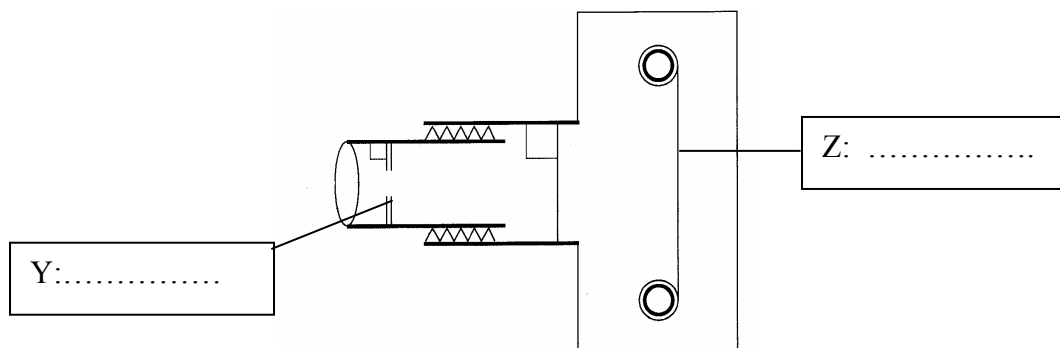


DIAGRAM 4

- (a) Label parts Y and Z in Diagram 4.
Label bahagian Y dan Z dalam Rajah 4.

[2 marks]

- (b) (i) Name the part in eyes that has the same function with part labelled Z in Diagram 4.

Namakan bahagian pada mata yang mempunyai persamaan fungsi dengan bahagian dilabel Z dalam Rajah 4.

.....
[1 mark]

- (ii) What is the function of the part Y?

Apakah fungsi bahagian Y?

.....
[1 mark]

- (c) (i) State one characteristic of images formed by the camera.

Nyatakan satu ciri imej yang dibentuk oleh kamera.

.....
[1 mark]

- (ii) State one optical instrument that forms the same characteristic of image as in (c)(i).

Nyatakan satu alat optikal yang membentuk ciri-ciri yang sama pada imej di (c)(i).

.....
[1 mark]

6

Diagram 5 shows the formation of twins in human being.
Rajah 5 menunjukkan pembentukan kembar pada manusia.

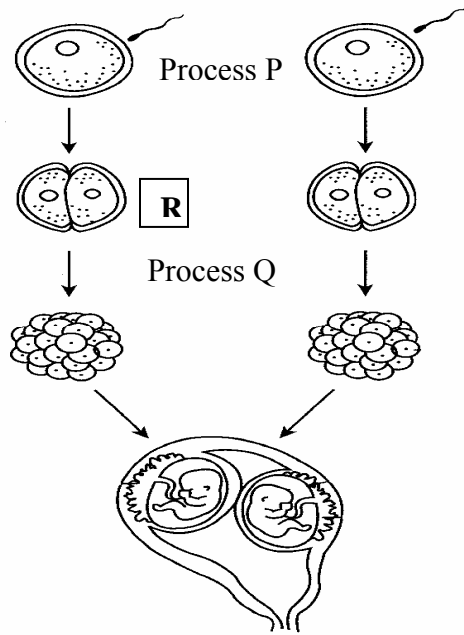


DIAGRAM 5

- (a) (i) Name process P.
Namakan proses P.

.....
[1 mark]

- (ii) What are the numbers of chromosomes in R?
Berapakah bilangan kromosom di dalam R?

.....
[1 mark]

- (b) (i) Name process Q.
Namakan proses Q.

.....
[1 mark]

- (ii) State **one** importance of process Q in human being.
Nyatakan satu kepentingan proses Q pada manusia

.....
[1 mark]

- (c) (i) What is the type of twins shown in Diagram 5?
Apakah jenis kembar yang ditunjukkan dalam Rajah 5?

.....
[1 mark]

- (ii) Explain your answer in (c) (i)
Terangkan jawapan anda di (c)(i).

.....

..... [1 mark]

- 7 Diagram 6 shows the calorie requirements for different individuals.
Rajah 6 menunjukkan keperluan kalori untuk setiap individu yang berbeza.

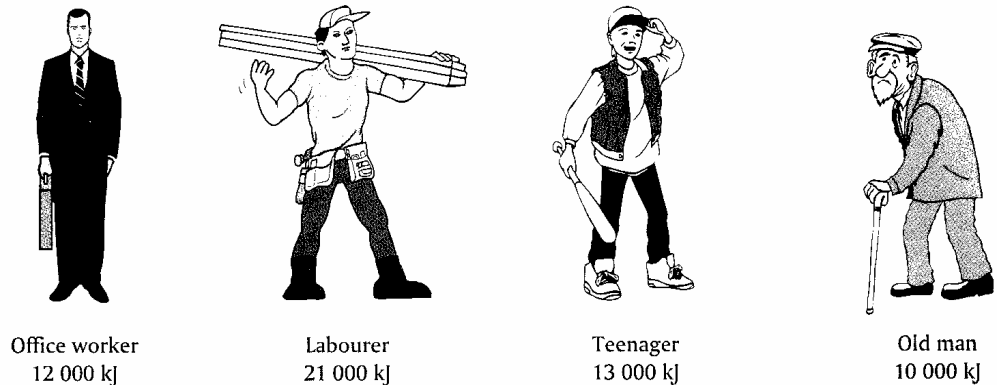


DIAGRAM 6

- (a) Why do human beings need calories?
Mengapa manusia memerlukan kalori?

..... [1 mark]

- (b) Based on Diagram 6, state two factors which affect the calorie requirement of an individual.
Berdasarkan Rajah 6, nyatakan dua faktor yang memberi kesan ke atas keperluan kalori setiap individu.

Factor 1 :

Factor 2 :

[2 marks]

- (c) (i) Which individual has the highest calorie requirement?
Individu yang manakah mempunyai keperluan kalori yang tertinggi?

..... [1 mark]

- (ii) Explain why the individual in (b)(i) needs the highest amount of energy?
Terangkan mengapa individu di (b)(i) memerlukan jumlah tenaga yang terbanyak?

.....
[1 mark]

- (d) State one reason why teenager needs more calories than the old man?
Nyatakan satu sebab kenapa remaja memerlukan lebih kalori berbanding orang tua?

.....
[1 mark]

- 8 Diagram 7.1 shows examples of processed food
Rajah 7.1 menunjukkan contoh-contoh makanan yang diproses

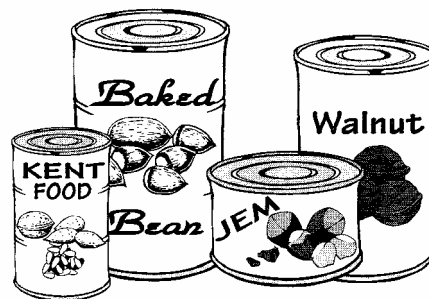


DIAGRAM 7.1

- (a) Why the foods in Diagram 7.1 need to be processed?
Mengapakah makanan dalam Rajah 7.1 perlu diproses?

.....
[1 mark]

- (b) (i) Name the method used to process the foods in Diagram 7.1
Namakan kaedah yang digunakan untuk memproses makanan dalam Rajah 7.1

.....
[1 mark]

- (ii) How the method of food processing in (b)(i) is carried out?
Bagaimana kaedah penyediaan makanan dalam (b)(i) dijalankan?

.....
[1 mark]

Diagram 7.2 shows example of another processed food
Rajah 7.2 menunjukkan satu lagi contoh makanan yang diproses

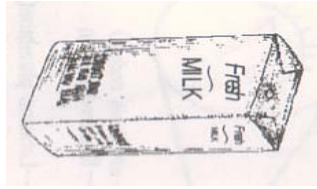


DIAGRAM 7.2

(c) (i) Name the method used to process the foods in Diagram 7.2
Namakan kaedah yang digunakan untuk memproses makanan dalam Rajah 7.2

.....
 [1 mark]

(ii) How the method of food processing in (c)(i) is carried out?
Bagaimana kaedah penyediaan makanan dalam (c)(i) dijalankan?

.....
 [1 mark]

(d) Where the information of the processed food is obtained?
Dimanakah maklumat tentang makanan yang diproses diperolehi?

.....
 [1 mark]

9. Diagram 9 shows a wave.
Rajah 9 menunjukkan satu gelombang

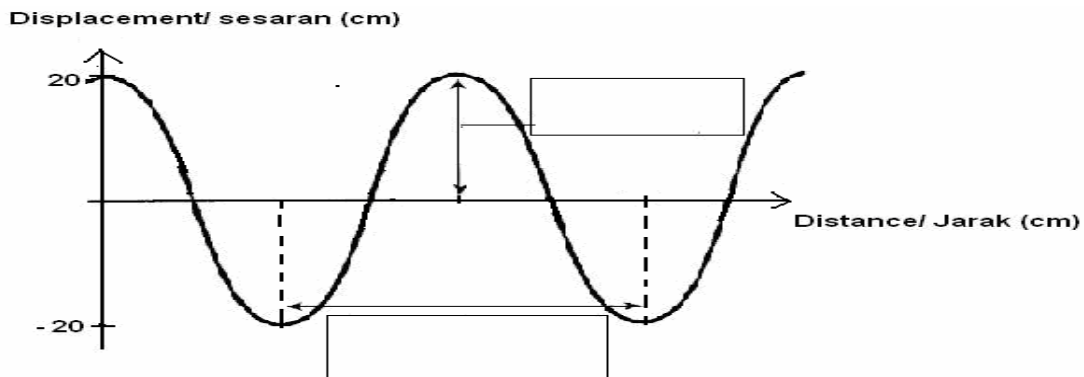


DIAGRAM 9.1

(a) Choose the correct terms and fill in the boxes in Diagram 9.1.
Pilih istilah yang betul dan isikan kotak dalam Rajah 9.1.

Wavelength	Amplitude	Frequency	Period
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[2 marks]

- (b) State one characteristic of wave.
Nyatakan satu sifat gelombang.

.....
[1 mark]

Diagram 9.2 shows the electromagnetic waves spectrum.
Rajah 9.2 menunjukkan spektrum gelombang electromagnet.

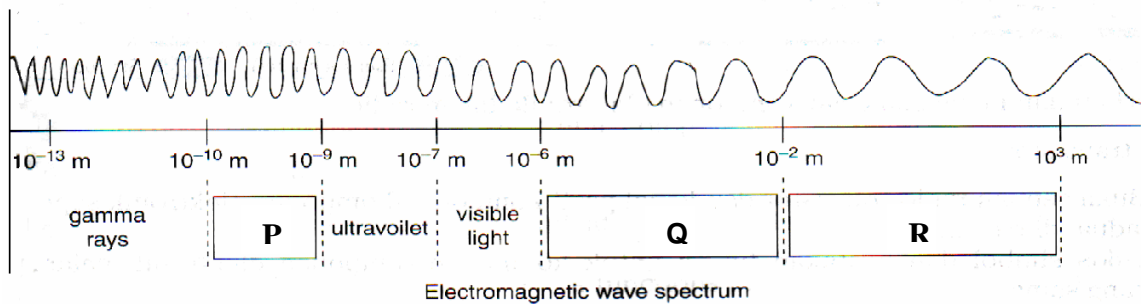


DIAGRAM 9.2

- (c) P, Q and R are three types of waves. Which of the waves is
P, Q dan R adalah tiga jenis gelombang. Gelombang yang manakah ialah

(i) radio wave?
gelombang radio?

(ii) x-ray?
sinar-X

[2 marks]

- (d) Why is the radio wave suitable for communication?
Mengapakah gelombang radio sesuai untuk tujuan komunikasi?

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

Section C

[20 marks]

Answer **Question 10** and either **Question 11** or **Question 12**

10.

Vulcanised rubber is better than non-vulcanised rubber for making tyres.
Getah asli tervulkan lebih baik berbanding getah asli tak tervulkan apabila digunakan untuk membuat tayar.

You are suggested to plan an experiment to investigate the differences between the two types of rubber in terms of elasticity.

Anda dicadangkan untuk merancang satu eksperimen yang bersesuaian untuk menguji perbezaan kedua-dua jenis getah dari segi kekenyalan.

(a) Suggest a hypothesis to investigate the above statement.

Cadangkan satu hipotesis untuk menyiasat pernyataan di atas.

[1 mark]

You are given strips of 10cm vulcanised rubber, 10cm non-vulcanised rubber, weight with a mass of 200g, 2 clips, a stop watch, a retort stand and other apparatus

Anda dibekalkan dengan satu jalur getah tervulkan 10 cm, satu jalur getah tak tervulkan 10 cm, pemberat berjisim 200g, 2 klip, satu jam randik, kaki retot dan radas lain.

(b) Describe an experiment to test your hypothesis in 10(a) based on the following criteria:

Huraikan satu eksperimen untuk menguji hipotesis anda di 10(a) berpandukan kriteria berikut:

- | | | |
|-------|---|-----------|
| (i) | Aim of the experiment
<i>Tujuan eksperimen</i> | [1 mark] |
| (ii) | Identification of variables
<i>Mengenal pasti pembolehubah</i> | [2 marks] |
| (iii) | List of apparatus and materials
<i>Senarai radas dan bahan</i> | [1 mark] |
| (iv) | Procedure or method
<i>Prosedur atau kaedah</i> | [4 marks] |
| (v) | Tabulation of data
<i>Penjadualan data</i> | [1 mark] |

11. (a) State **four** differences between nervous coordination and hormonal coordination.

Nyatakan empat perbezaan antara koordinasi saraf dengan koordinasi hormon.

[4 marks]

- (b) Diagram 11 shows examples of endocrine glands.

Rajah 11 menunjukkan beberapa contoh kelenjar endokrin.

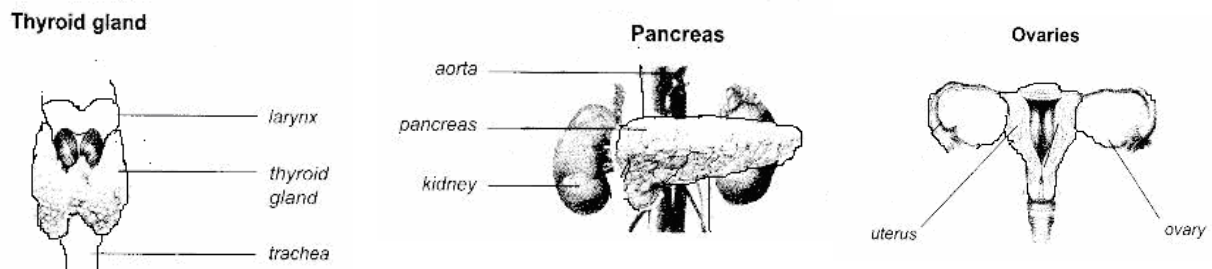


DIAGRAM 11

Study the information in Diagram 11 and construct the concept of endocrine glands. Your answer should be based on the following steps:

Kaji maklumat dalam Rajah 11 dan bina konsep tentang kelenjar endokrin.

Jawapan and hendaklah berdasarkan langkah-langkah berikut:

- Identify the information
Mengenal pasti maklumat. [1 mark]
- Identify the common characteristics
Mengenal pasti ciri-ciri sepunya. [2 marks]
- Write an example of another endocrine gland and state the reason
Tuliskan satu contoh lain kelenjar endokrin dan nyatakan sebab. [1 mark]
- Write a non example of endocrine gland and state the reason.
Tuliskan satu bukan contoh kelenjar endokrin dan nyatakan sebab. [1 mark]
- State the actual concept of endocrine glands
Nyatakan konsep sebenar kelenjar endokrin [1 mark]

12. (a) State **four** differences between metal and non metal
Nyatakan empat ciri perbezaan antara logam dan bukan logam [4 marks]

(b) Nora found out that the water comes out from the pipe in her house is cloudy and yellowish in colour after a heavy rain.
Nora mendapati air yang keluar dari paip rumahnya keruh dan berwarna kuning, selepas hujan lebat.

Explain how you can help her to gets a clean water.

Terangkan bagaimana anda boleh membantunya untuk mendapatkan air yang bersih.

Your answer should include the following;

Jawapan anda perlu merangkumi perkara berikut;

- Identify the problem
Mengenal pasti masalah [1 mark]
- Clarification of the problem
Penjelasan masalah [1 mark]
- Solving methods
Kaedah-kaedah penyelesaian [3 marks]
- Evaluate the methods
Penilaian kaedah [1 mark]

END OF QUESTION PAPER
KERTAS PEPERIKSAAN TAMAT