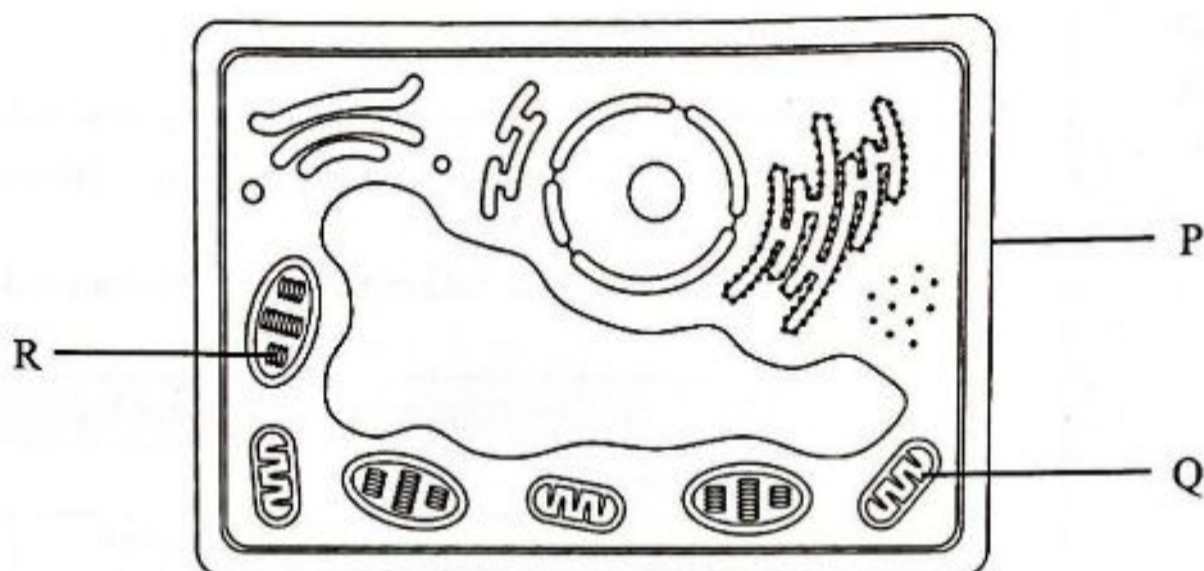


Bahagian A
Section A

[60 markah]
[60 marks]

Jawab **semua** soalan dalam bahagian ini.
Answer **all** questions in this section.

- 1 Rajah 1 menunjukkan struktur satu sel tumbuhan.
Diagram 1 shows the structure of a plant cell.



Rajah 1
Diagram 1

- (a) (i) Namakan komponen sel P, Q dan R.
Name cell component P, Q and R.

P :

Q :

R :

[3 markah]
[3 marks]

- (ii) Nyatakan fungsi komponen sel P.
State the function of cell componen P.

.....

[1 markah]
[1 mark]

1(a)(i)
3

1(a)(ii)
1

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- (b) Terangkan kesan kepada sel tumbuhan jika komponen sel R tiada.
Explain the effect to the plant cell if cell component R is absent.

.....

.....

.....

1(b)

	2
--	---

[2 markah]
[2 marks]



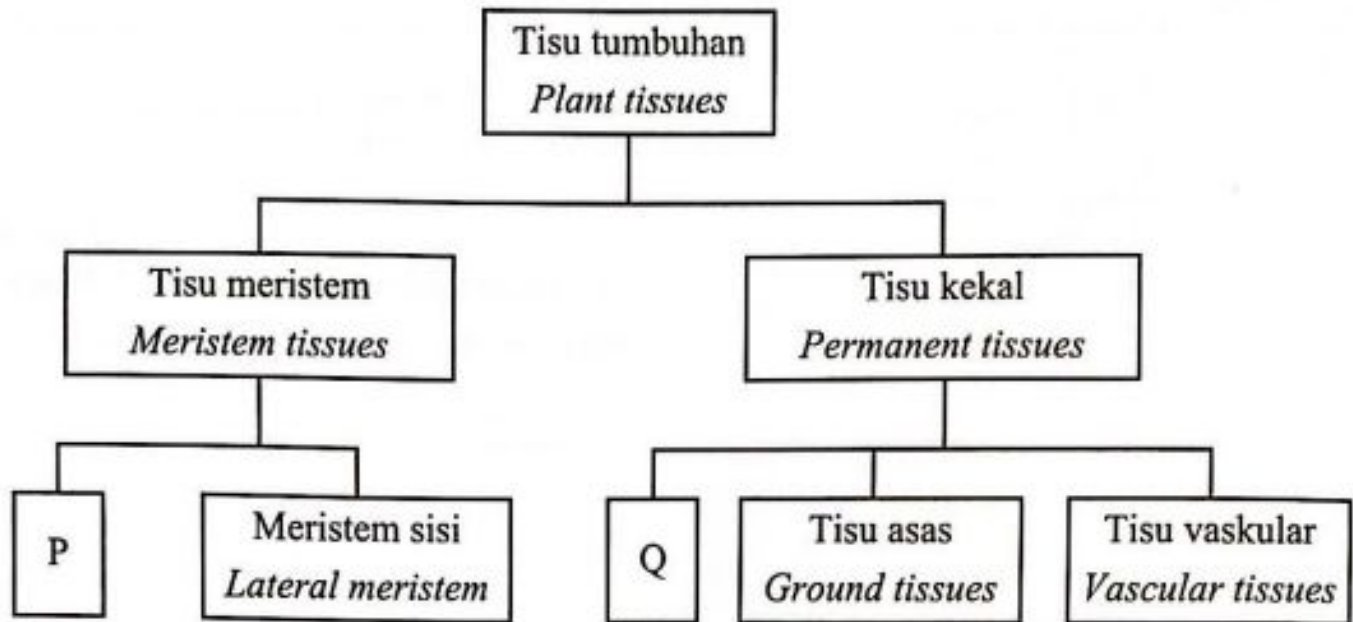
[2 markah]
[2 marks]

[2 markah]
[2 marks]

Total
A1

	6
--	---

2 Rajah 2.1 menunjukkan pengelasan tisu tumbuhan.
Diagram 2.1 shows the classification of plant tissues.



Rajah 2.1
Diagram 2.1

(a) (i) Namakan tisu P dan Q.
Name tissues P and Q.

Tisu P :
Tissue P

Tisu Q :
Tissue Q

[2 markah]
[2 marks]

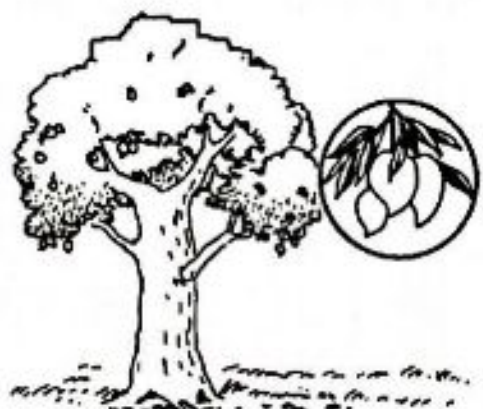
(ii) Namakan **satu** tisu yang membentuk tisu vaskular.
*Name **one** tissue that form vascular tissue.*

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

2(a)(i)
2

2(a)(ii)
1

(b) Rajah 2.2 menunjukkan dua jenis tumbuhan yang berbeza kitar hidupnya.
Diagram 2.2 shows two types of plants that have different life cycles.



Tumbuhan R
Plant R



Tumbuhan S
Plant S

Rajah 2.2
Diagram 2.2

(i) Namakan jenis tumbuhan R berdasarkan kitar hidupnya.
Name the type of plant R based on its life cycle.

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

2(b)(i)

1

(ii) Nyatakan **dua** perbezaan antara tumbuhan R dan tumbuhan S.
State two differences between plant R and plant S.

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

2(b)(ii)

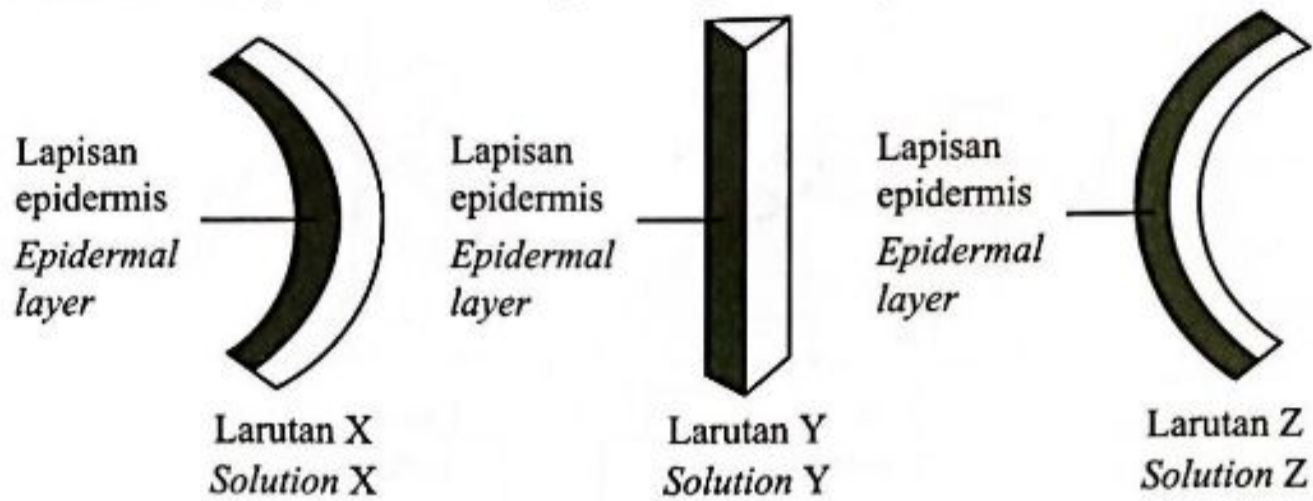
2

Total
A2

6

3 Rajah 3.1 menunjukkan pemerhatian jalur sawi yang diletakkan dalam larutan sukrosa yang berlainan kepekatan selepas direndam selama 20 minit.

Diagram 3.1 shows the observation of mustard green strip placed in different concentrations of sucrose solution after being immersed for 20 minutes.



Rajah 3.1
Diagram 3.1

(a) (i) Berdasarkan Rajah 3.1, nyatakan jenis larutan X dan Z.
Based on Diagram 3.1, state the type of solutions X and Z.

Larutan X :
Solution X

Larutan Z :
Solution Z

[2 markah]
[2 marks]

(ii) Lukis dan label satu sel sawi yang direndam dalam larutan Z.
Draw and label a mustard green cell that immersed in solution Z.

[2 markah]
[2 marks]

3(a)(i)
2

3(a)(ii)
2

(b) Kimchi merupakan makanan tradisional masyarakat Korea dan menjadi ikon Korea di serata dunia.

Rajah 3.2 menunjukkan tiga langkah penyediaan kimchi daripada kubis.

Kimchi is a traditional food of the Korean and has become a Korean icon around the world.

Diagram 3.2 shows the three steps of preparing kimchi from cabbage.



Kubis direndam dalam larutan garam pekat
Cabbage is immersed in concentrated salt solution



Kubis diperap bersama pes cili
Cabbage is marinated with chilli paste



Kimchi disimpan di dalam botol bertutup
Kimchi is kept in a sealed bottle

Rajah 3.2
Diagram 3.2

Terangkan bagaimana langkah pertama berkesan dalam pengawetan kubis.

Explain how the first step is effective in preserving the cabbage.

.....
.....
.....
.....

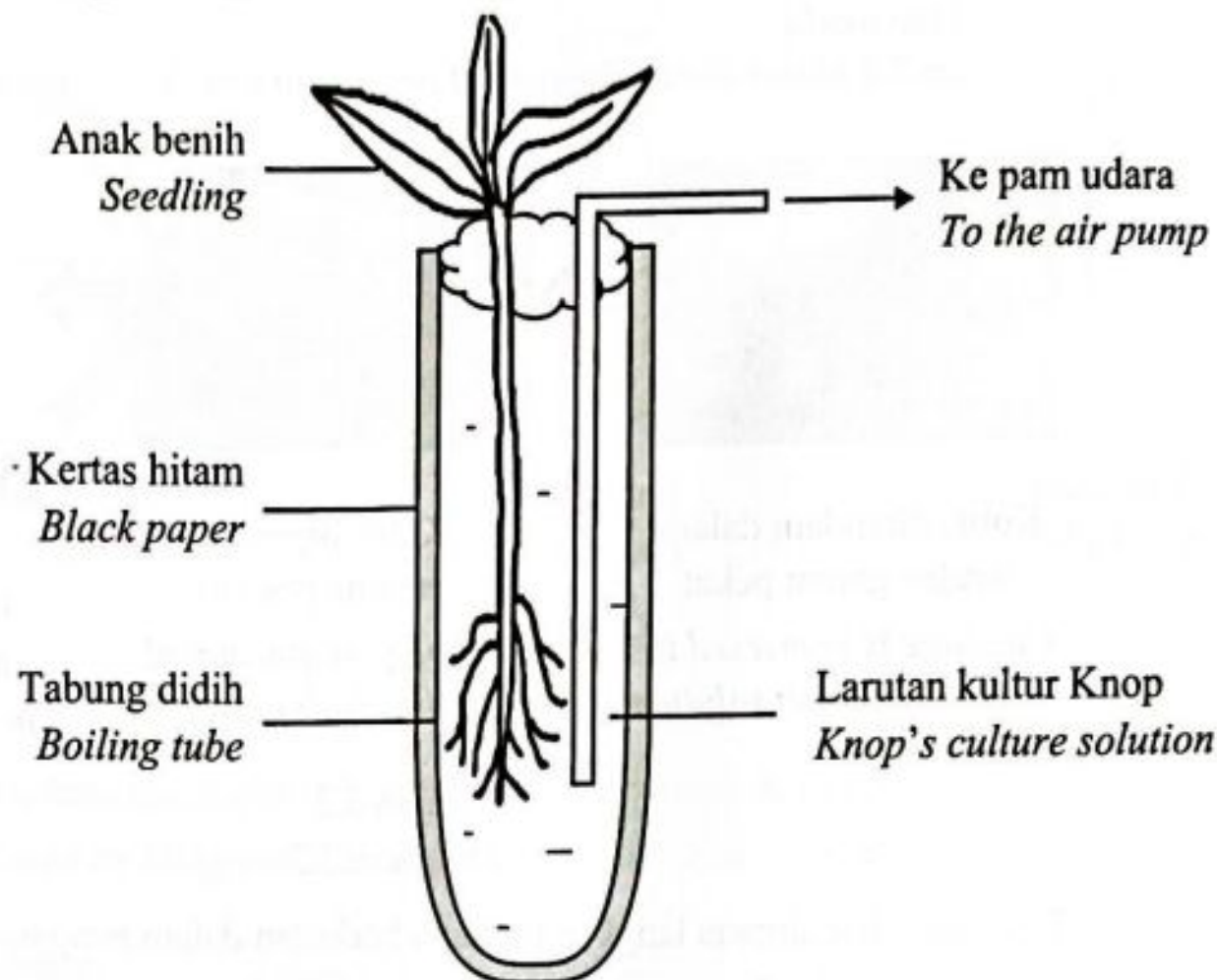
[3 markah]
[3 marks]

3(b)
[3]

Total
A3
[7]

- 4 Rajah 4.1 menunjukkan susunan radas bagi eksperimen untuk mengkaji kesan nutrien ke atas pertumbuhan anak benih jagung.

Diagram 4.1 shows the set-up of the apparatus for an experiment to study the effect of nutrients on the growth of maize seedlings.



Rajah 4.1
Diagram 4.1

- (a) (i) Nyatakan **dua** unsur makronutrien yang terdapat di dalam larutan kultur Knop.

State **two** macronutrient elements present in Knop's culture solution.

4(a)(i)

2

.....
.....

[2 markah]
[2 marks]

- (ii) Kekurangan makronutrien X menyebabkan pertumbuhan akar anak benih jagung yang tidak sihat.

Apakah makronutrien X?

Deficiency of macronutrient X caused unhealthy root growth of the maize seedling.

What is macronutrient X?

4(a)(ii)

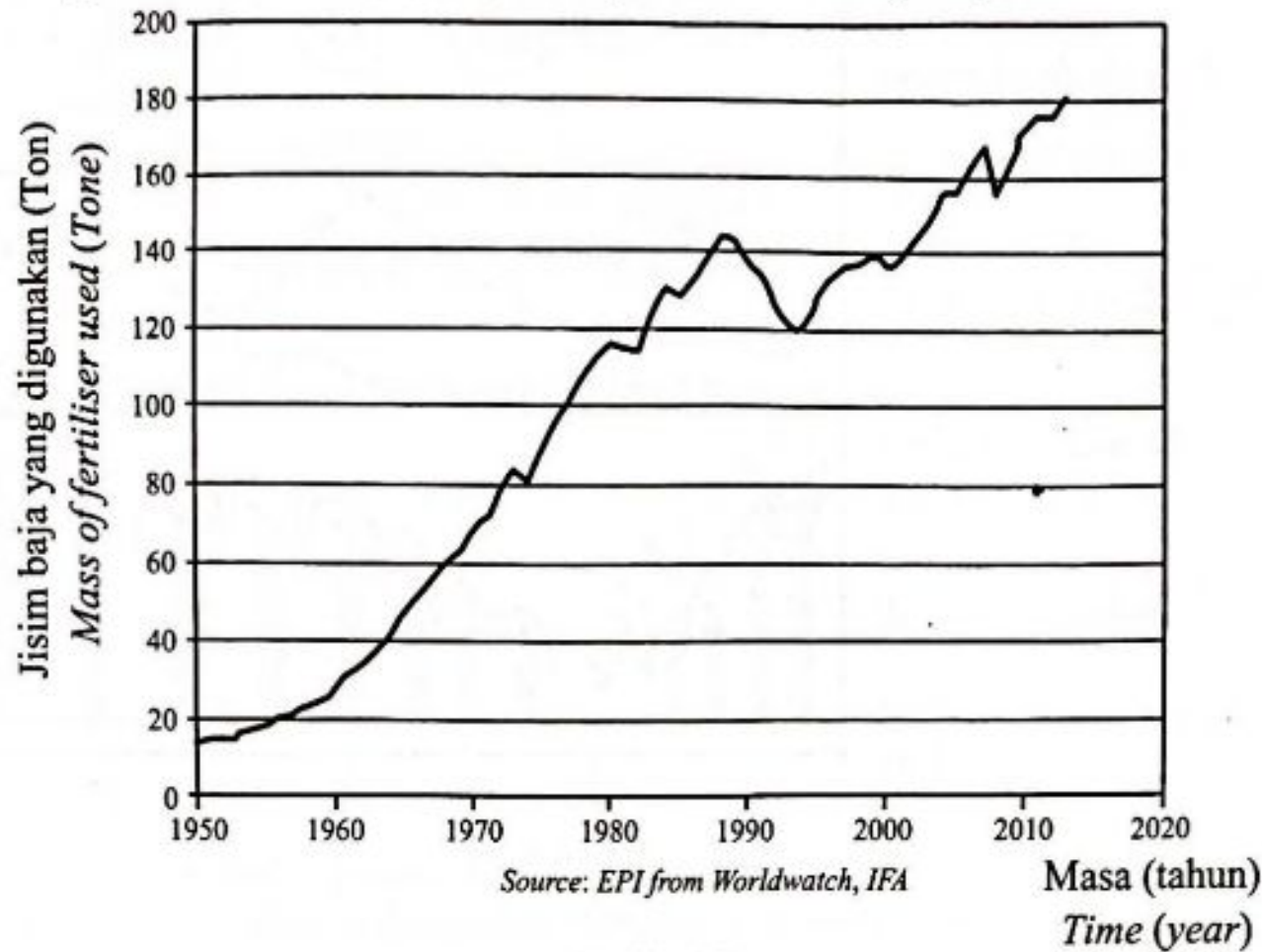
1

.....

[1 markah]
[1 mark]

- (b) Rajah 4.2 menunjukkan satu graf penggunaan baja dunia dari tahun 1950 hingga tahun 2013.

Diagram 4.2 shows a graph of world fertiliser consumption from 1950 to 2013.



Rajah 4.2
Diagram 4.2

Berdasarkan graf pada Rajah 4.2,
Based on the graph in Diagram 4.2,

- (i) terangkan kesan penggunaan baja ke atas kualiti air.
explain the effect of the usage of fertiliser on water quality.

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

4(b)(i)

	2
--	---

- (ii) cadangkan satu cara bagi mengatasi masalah dinyatakan di 4(b)(i).
Terangkan jawapan anda.
suggest a way to overcome the problem stated in 4(b)(i).
Explain your answer.

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

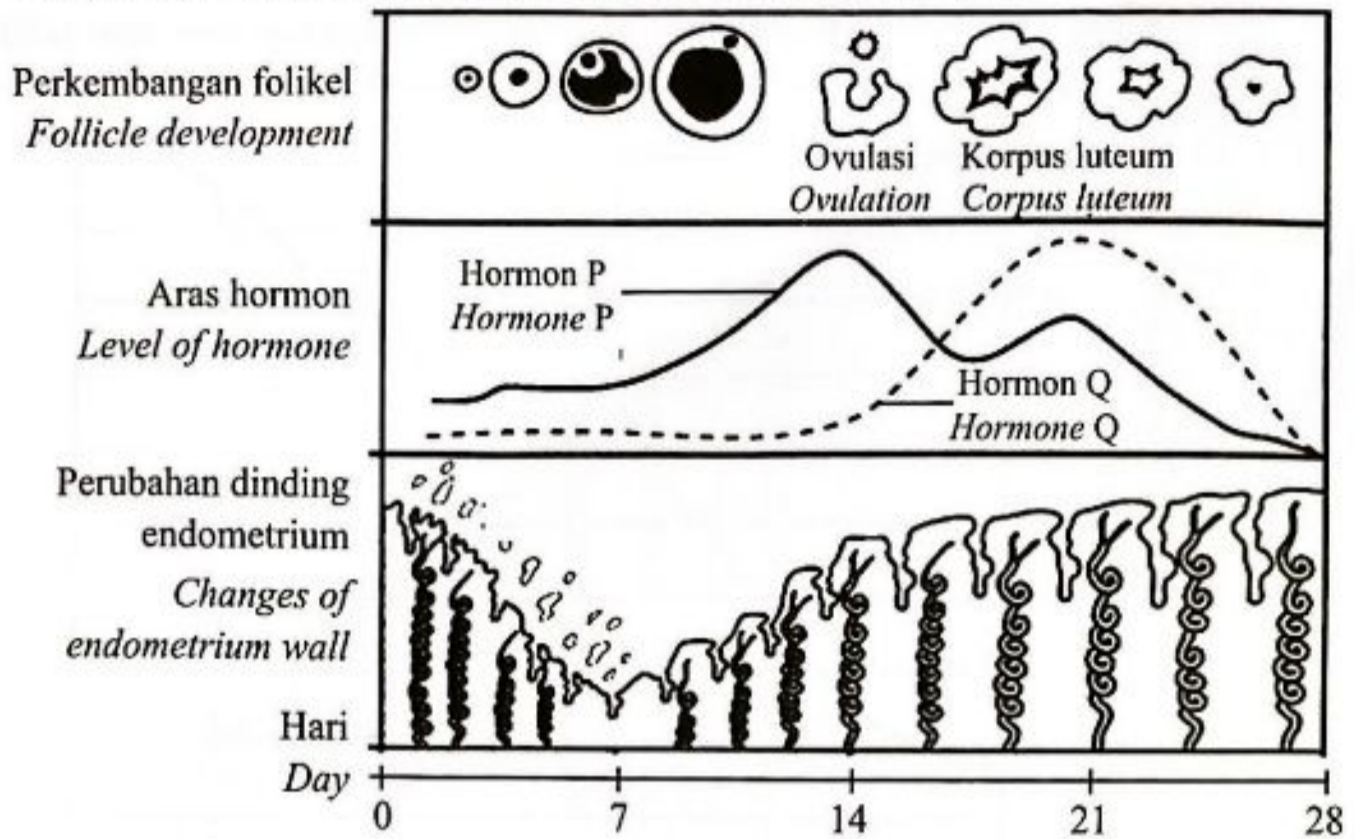
4(b)(ii)

	2
--	---

Total
A4

	7
--	---

5 Rajah 5 menunjukkan perubahan yang berlaku dalam satu kitar haid.
Diagram 5 shows the changes that occurred in a menstrual cycle.



Rajah 5
Diagram 5

(a) (i) Namakan hormon P.
Name hormone P.

5(a)(i)
1

[1 markah]
[1 mark]

(ii) Nyatakan peranan hormon P dalam kitar haid.
State the role of hormone P in menstrual cycle.

5(a)(ii)
1

[1 markah]
[1 mark]

(b) Terangkan hubungan antara aras hormon Q dan perubahan dinding endometrium pada hari ke-14 hingga hari ke-21.
Explain the relationship between the level of hormone Q and the changes of endometrium wall on day 14 to day 21.

5(b)
2

[2 markah]
[2 marks]

- (c) Puan S mengambil pil perancang bagi mencegah kehamilan. Pil tersebut mengandungi hormon Q dan sedikit hormon P. Doktor menasihati beliau supaya mengambil pil tersebut pada hari pertama kedatangan haid dan berhenti pada hari ke-22.

Madam S took contraceptive pills to prevent pregnancy. The pills contain hormone Q and small amount of hormone P. The doctor advised her to take the pill on the first day of menstruation and stop on the 22nd day.

Terangkan bagaimana pengambilan pil perancang dapat menghalang kehamilan.

Explain how taking contraceptive pills able to prevent pregnancy.

.....

.....

.....

[2 markah]
[2 marks]

5(c)

	2
--	---

- (d) Selepas ovulasi, korpus luteum terbentuk. Keadaan korpus luteum dan ketebalan dinding endometrium bergantung kepada persenyawaan di antara ovum dan sperma.

After ovulation, the corpus luteum is formed. The condition of corpus luteum and the thickness of endometrium wall depends on the fertilisation between ovum and sperm.

Nyatakan perbezaan bagi keadaan korpus luteum dan dinding endometrium dalam situasi berikut:

State the difference for the condition of corpus luteum and the endometrium wall in the following situation:

Situasi <i>Situation</i>	Persenyawaan berlaku <i>Fertilisation occurs</i>	Persenyawaan tidak berlaku <i>Fertilisation does not occur</i>
Keadaan korpus luteum <i>Condition of corpus luteum</i>		
Keadaan dinding endometrium <i>Condition of endometrium wall</i>		

[2 markah]
[2 marks]

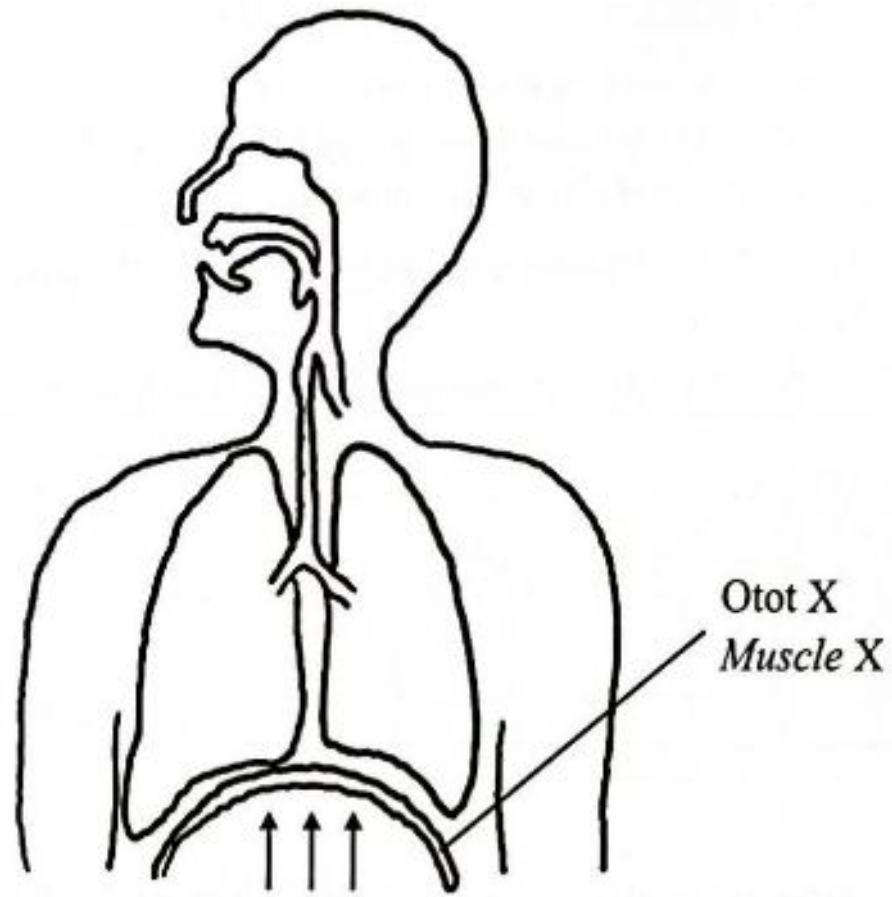
5(d)

	2
--	---

Total
A5

	8
--	---

- 6 Rajah 6 menunjukkan salah satu peringkat dalam mekanisme pernafasan manusia.
Diagram 6 shows one of the stages in the breathing mechanism of humans.



Rajah 6
Diagram 6

- (a) (i) Namakan peringkat mekanisme pernafasan dalam Rajah 6.
Name the stage of breathing mechanism in Diagram 6.

6(a)(i)

1

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

- (ii) Terangkan tindakan otot X semasa peringkat mekanisme pernafasan tersebut.
Explain the action of muscles X during the stage of the breathing mechanism.

6(a)(ii)

2

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

(b) Mekanisme pernafasan tersebut diperlukan untuk penyingkiran gas Y dari paru. Gas Y diangkut oleh sistem peredaran darah dalam tiga cara ke paru. *The breathing mechanism is needed to expel gas Y from lungs. Gas Y is transported by blood circulatory system in three ways to the lungs.*

(i) Nyatakan **satu** cara pengangkutan gas Y.

State one way of the transport of gas Y.

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

6(b)(i)

1

(ii) Terangkan pengangkutan gas Y dari sel badan ke dalam kapilari darah. *Explain the transport of gas Y from the body cell into the blood capillaries.*

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

6(b)(ii)

2

(c) Penyakit asma dan bronkitis kronik merupakan penyakit yang berkaitan sistem respirasi manusia.

Beri **satu** persamaan dan **satu** perbezaan di antara kedua-dua penyakit tersebut.

Asthma and chronic bronchitis are diseases related to human respiratory system.

Give one similarity and one difference between the two diseases.

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

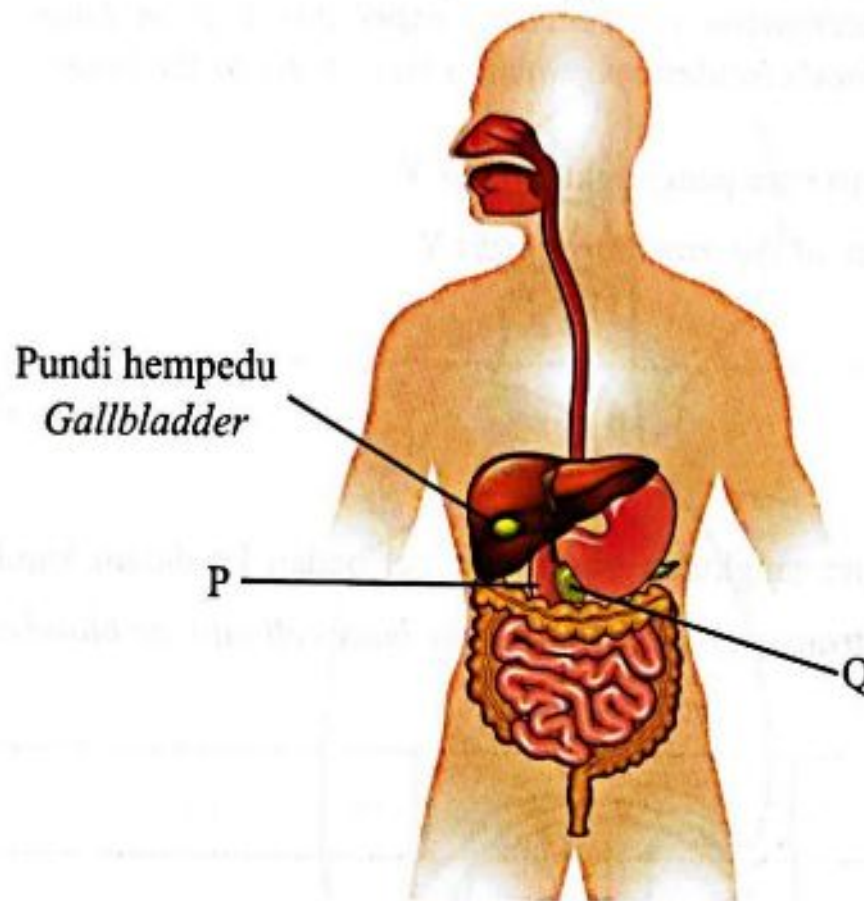
6(c)

2

Total
A6

8

7 Rajah 7 menunjukkan sistem pencernaan manusia.
Diagram 7 shows the human digestive system.



Rajah 7
Diagram 7

(a) (i) Nyatakan **satu** fungsi P.
State one function of P.

7(a)(i)
[] [1]

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

(ii) Namakan **satu** enzim yang terdapat di dalam jus yang dirembeskan oleh Q.
Name one enzyme found in the juice secreted by Q.

7(a)(ii)
[] [1]

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

(b) Huraikan proses pencernaan lipid dalam P.
Describe the process of lipid digestion in P.

7(b)
[] [2]

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

- (c) Encik X disahkan mengalami batu hempedu yang menyebabkan kesakitan yang teruk. Doktor menasihatkan agar pembedahan dilakukan dengan segera. Terangkan bagaimana pencernaan lipid terjejas jika pundi hempedu dibuang.
Mr. X was confirmed to have gallstones that caused severe pain. The doctor advised that a surgery should be performed immediately. Explain how lipids digestion is affected if the gallbladder is removed.

.....

[3 markah]
[3 marks]

7(c)

	3
--	---

- (d) Cadangkan cara penyediaan makanan yang sesuai bagi Encik X. Terangkan jawapan anda.
Suggest suitable way to prepare food for Mr. X. Explain your answer.

.....

[2 markah]
[2 marks]

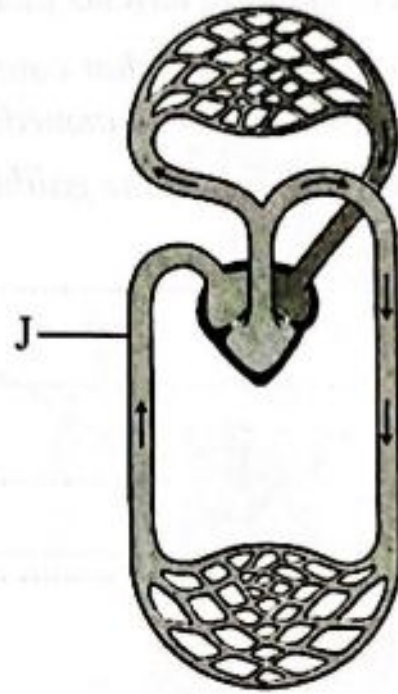
7(d)

	2
--	---

Total
A7

	9
--	---

8 Rajah 8.1 menunjukkan sistem peredaran darah dalam satu organisma.
Diagram 8.1 shows the blood circulatory system in an organism.



Rajah 8.1
Diagram 8.1

(a) (i) Namakan struktur J.
Name structure J.

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

(ii) Terangkan jenis sistem peredaran darah organisma tersebut.
Explain the type of blood circulatory system of the organism.

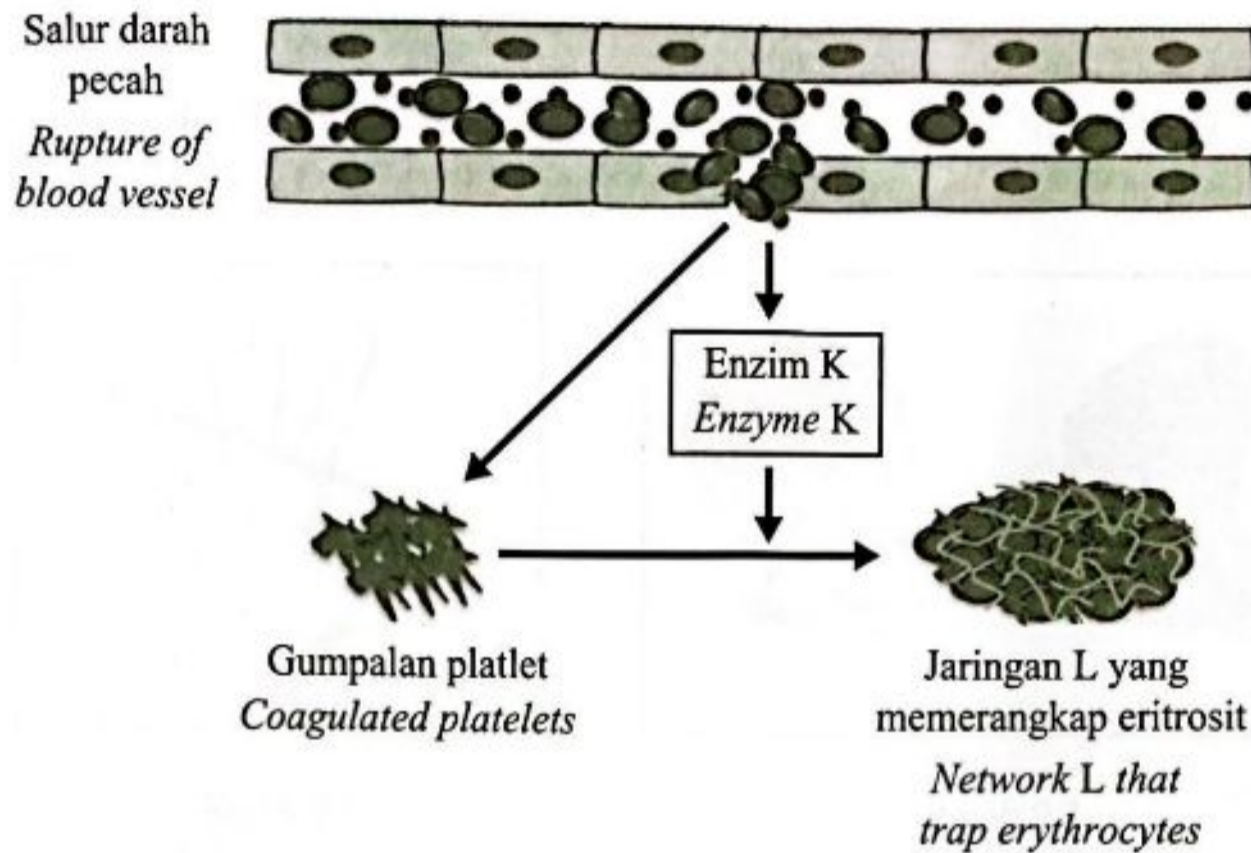
.....
.....
[2 markah]
[2 marks]

(iii) Terangkan **satu** perbezaan di antara sistem peredaran organisma tersebut berbanding sistem peredaran manusia.
*Explain **one** difference between the circulatory system of the organism compared to the human circulatory system.*

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

- (b) Rajah 8.2 menunjukkan mekanisme pembekuan darah yang berlaku apabila terdapat kecederaan pada salur darah.

Diagram 8.2 shows the blood clotting mechanism that happened when there is an injury on the blood vessel.



Rajah 8.2
Diagram 8.2

- (i) Terangkan bagaimana enzim K bertindak membentuk jaringan L pada permukaan luka yang memerangkap eritrosit dan menutup luka tersebut.

Explain how enzyme K acts to form network L on the wound surface to trap erythrocytes and close the wound.

.....

.....

.....

[2 markah]
[2 marks]

8(b)(i)

	2
--	---

- (ii) Terangkan akibat jika mekanisme tersebut gagal berfungsi.

Explain the consequences if the mechanism fails to function.

.....

.....

[2 markah]
[2 marks]

8(b)(ii)

	2
--	---

Total
A8

	9
--	---

[Lihat halaman sebelah

Bahagian B**Section B**

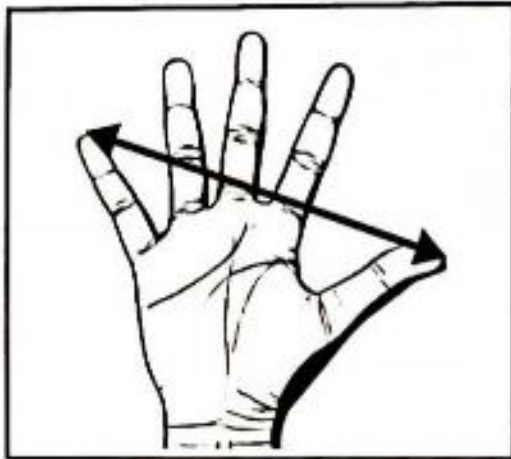
[20 markah]

[20 marks]

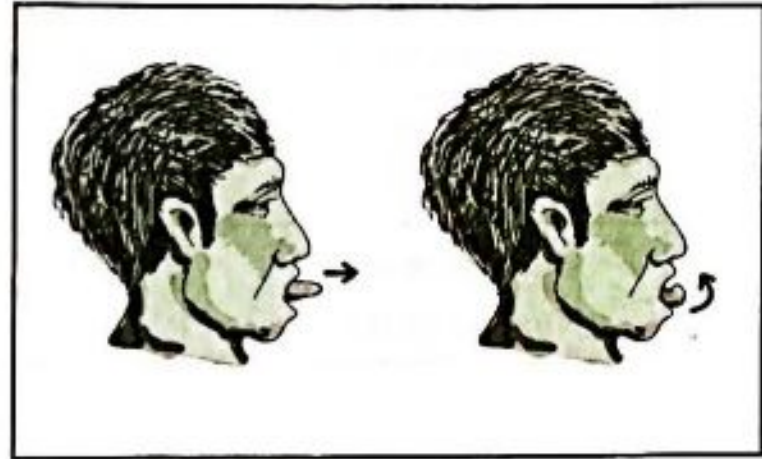
Jawab satu soalan daripada bahagian ini.

Answer one question from this section.

- 9 (a) Rajah 9.1 dan Rajah 9.2 menunjukkan dua jenis variasi yang dikaji oleh murid tingkatan 5.
Diagram 9.1 and Diagram 9.2 shows two types of variation studied by form 5 students.



Rajah 9.1
Diagram 9.1



Rajah 9.2
Diagram 9.2

Jadual 1 menunjukkan hasil kajian tersebut.

Table 1 shows the results of the study.

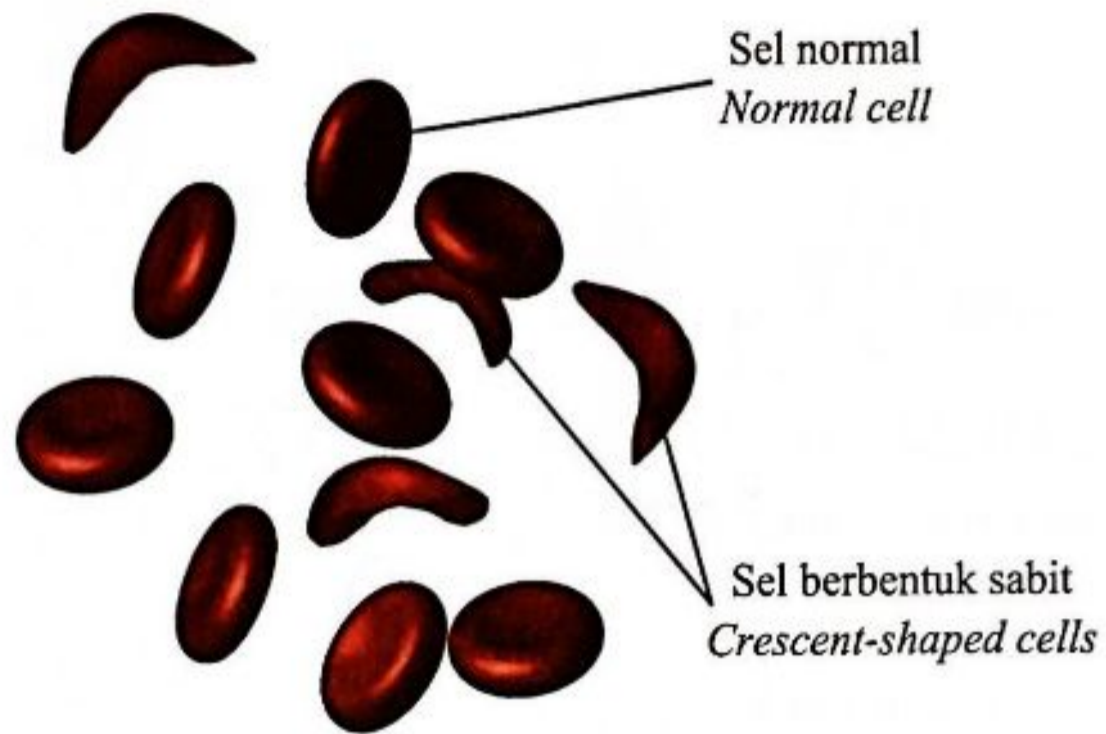
Julat panjang jengkal / cm <i>Ranges of handspan / cm</i>	15 – 16	17 – 18	19 – 20	21 – 22	23 – 24
Bilangan murid <i>Number of students</i>	3	10	12	4	1

Ciri <i>Characteristic</i>	Kebolehan menggulung lidah <i>Ability to roll tongue</i>	
Trait <i>Traits</i>	Boleh <i>Able</i>	Tidak boleh <i>Unable</i>
Bilangan murid <i>Number of students</i>	20	10

Jadual 1
Table 1

- (i) Nyatakan jenis variasi bagi Rajah 9.1 dan Rajah 9.2.
State the type of variation for Diagram 9.1 and Diagram 9.2.
- [2 markah]
[2 marks]
- (ii) Terangkan perbezaan jenis graf yang diperolehi berdasarkan Jadual 1.
Explain the different types of graphs obtained based on Table 1.
- [2 markah]
[2 marks]
- (iii) Kebolehan menggulung lidah adalah ciri yang boleh diwariskan dari induk kepada anak.
Ability to roll tongue is a characteristic that can be inherited from parent to offspring.
- Berdasarkan Hukum Mendel Pertama, lukis rajah skema untuk menunjukkan pewarisan kebolehan menggulung lidah jika ayah dan ibu adalah heterozigot.
Based on Mendel's First Law, draw a schematic diagram to show the inheritance of ability to roll tongue if the father and the mother are heterozygote.
- [6 markah]
[6 marks]

- (b) Rajah 9.3 menunjukkan suatu penyakit yang disebabkan oleh mutasi dalam manusia.
Diagram 9.3 shows a type of disease that caused by mutation in human.



Rajah 9.3
Diagram 9.3

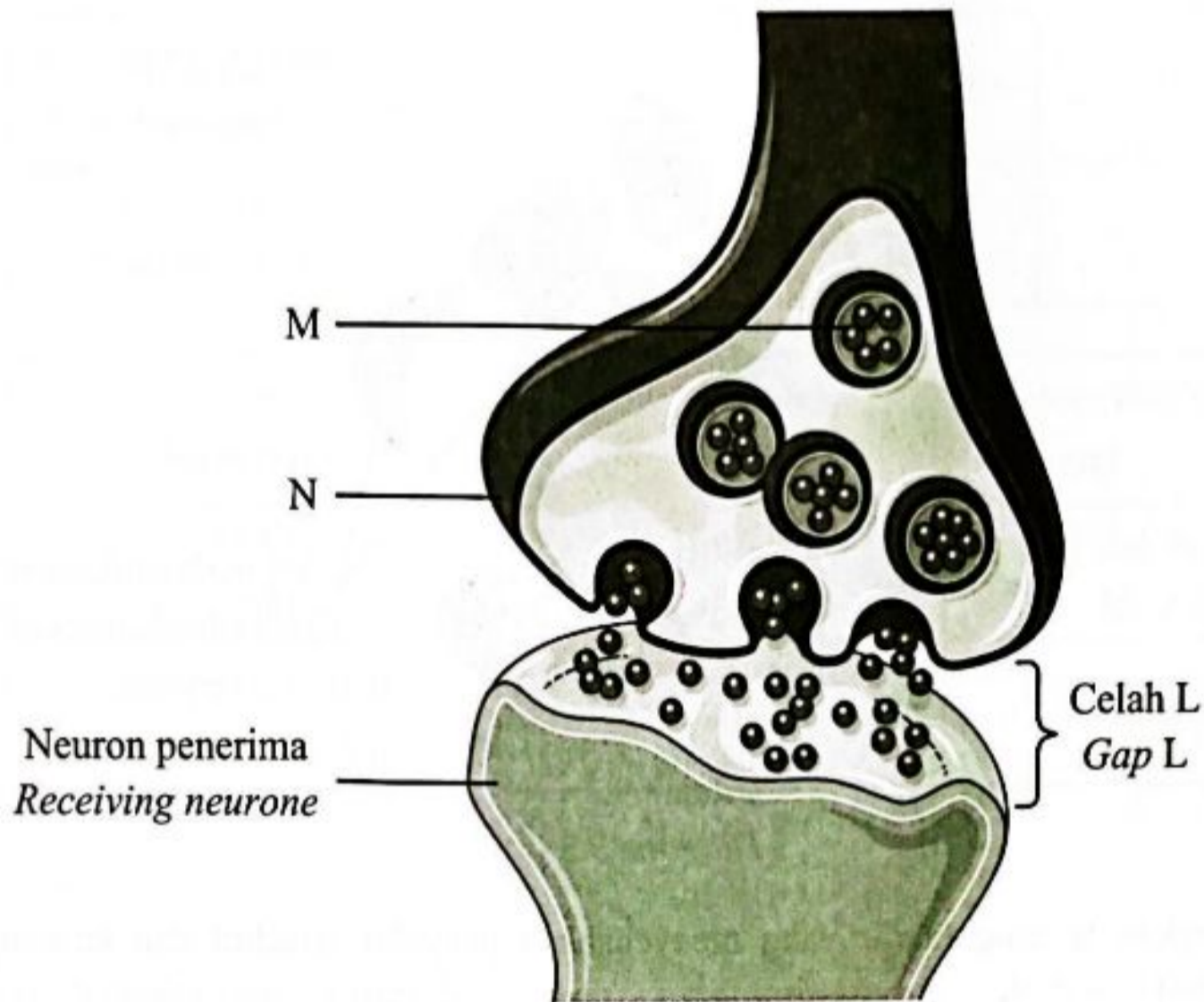
Bincangkan tentang faktor yang menyebabkan penyakit tersebut dan kesannya kepada kesihatan individu.

Discuss about the factors that caused the disease and the effects on the health of individual.

[10 markah]

[10 marks]

- 10 (a) Rajah 10.1 menunjukkan penghantaran impuls saraf merentasi celah L.
 Diagram 10.1 shows the transmission of nerve impulse across gap L.



Rajah 10.1
 Diagram 10.1

- (i) Nyatakan bahan M dan satu contoh bahan M.
 State the substance M and one example of M.
- (ii) Terangkan penghantaran impuls merentasi celah L.
 Explain the transmission of impulse across gap L.

[2 markah]
 [2 marks]

[2 markah]
 [2 marks]

(b) Rajah 10.2(a) dan Rajah 10.2(b) menunjukkan dua jenis dadah yang berbeza kategori.

Diagram 10.2(a) and Diagram 10.2(b) shows two types of drugs from different categories.



Amfetamin menyebabkan perlakuan agresif
Amphetamine causes aggressive behaviour

Rajah 10.2(a)
Diagram 10.2(a)



Morfin menghilangkan rasa kesakitan
Morphine relieves pain

Rajah 10.2(b)
Diagram 10.2(b)

Huraikan bagaimana dua jenis dadah ini mempengaruhi penghantaran impuls saraf merentasi celah L.

Describe how the two types of drugs affects the transmission of impulses across gap L.

[6 markah]

[6 marks]

- (c) Rajah 10.3 menunjukkan dua situasi berbeza yang dialami oleh individu P dan individu Q.
Diagram 10.3 shows two different situations experienced by individual P and individual Q.



Rajah 10.3
Diagram 10.3

Banding dan bezakan mekanisme homeostasis yang berlaku dalam badan individu P dan individu Q untuk mengawal atur suhu badan mereka.

Compare and contrast the mechanism of homeostasis that occurs in the body of the individual P and the individual Q to regulate their body temperature.

[10 markah]
 [10 marks]

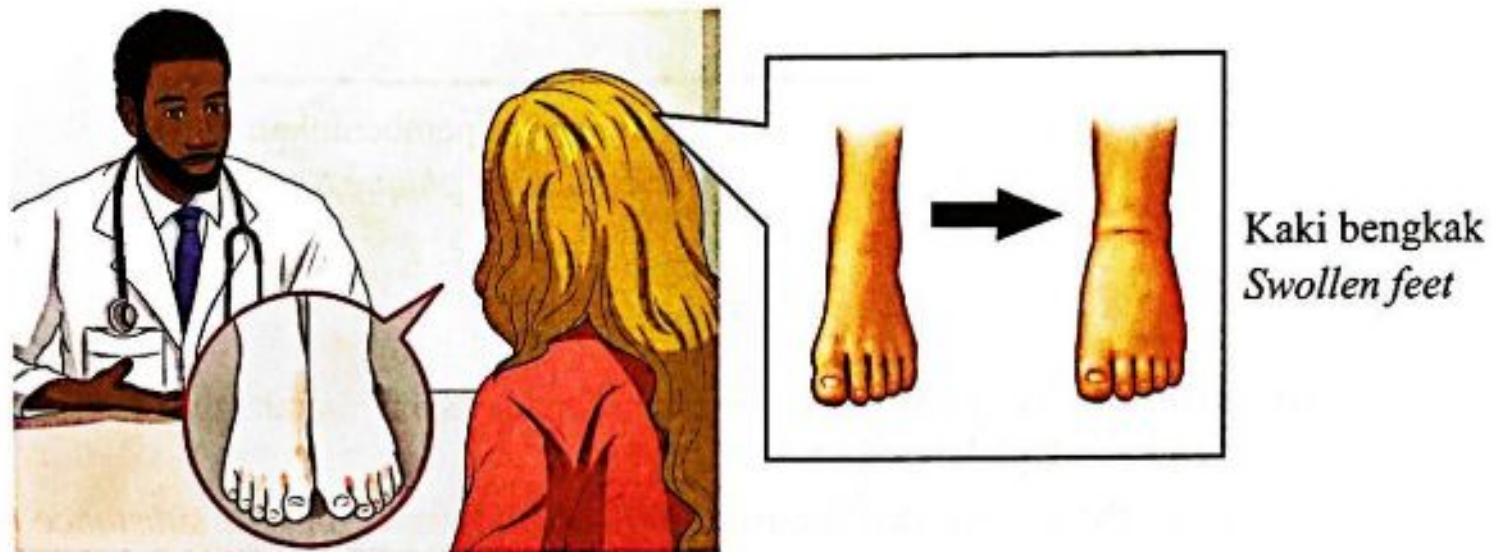
Bahagian C
Section C

[20 markah]
[20 marks]

Jawab **semua** soalan daripada bahagian ini.
Answer all the questions from this section.

- 11 (a) Rajah 11.1 menunjukkan keadaan yang dialami oleh seorang wanita yang hamil. Wanita tersebut mendapatkan nasihat doktor berkaitan simptom yang dialami seperti kaki yang bengkak.

Diagram 11.1 shows the condition experienced by a pregnant woman. The woman gets advice from the doctor regarding her symptoms that is swelling of the feet.



Rajah 11.1
Diagram 11.1

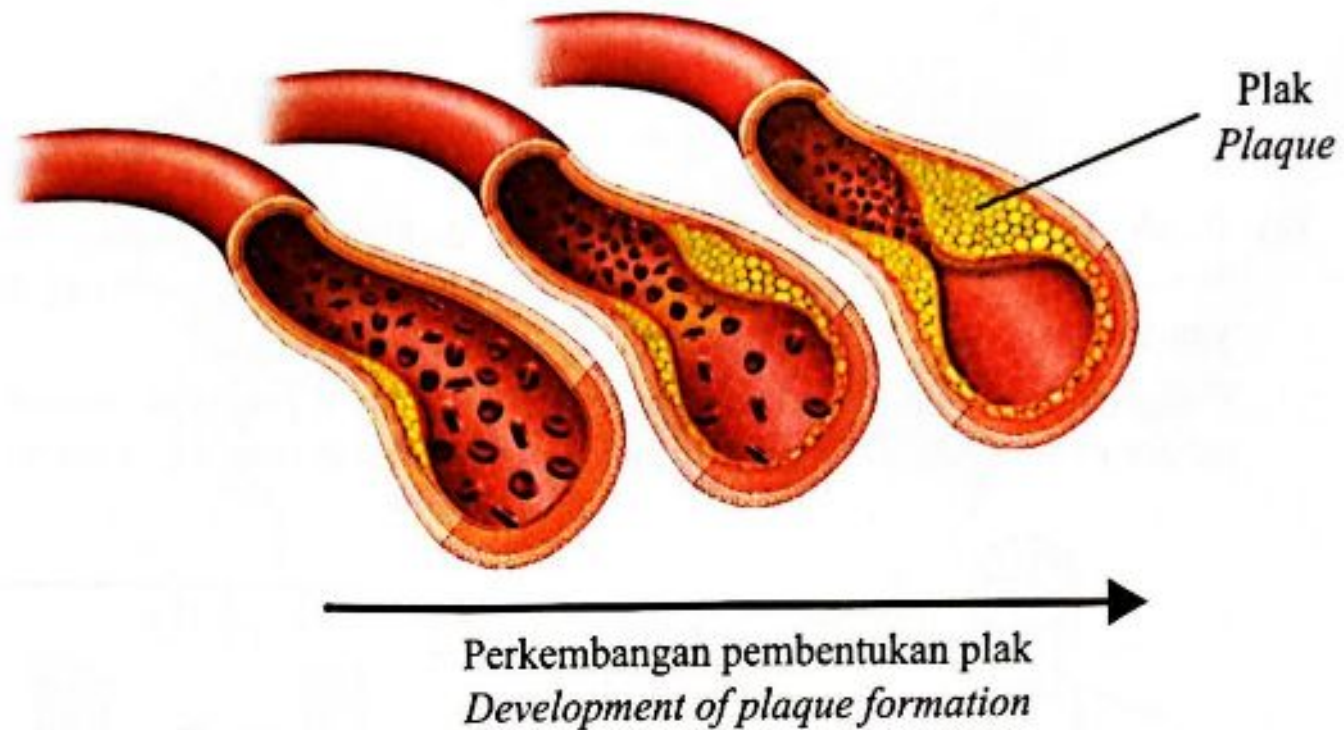
Berdasarkan Rajah 11.1, bincangkan bagaimana kehamilan menyebabkan simptom kaki yang bengkak.

Based on Diagram 11.1, discuss how pregnancy caused the symptom of swollen feet.

[5 markah]

[5 marks]

- (b) Rajah 11.2 menunjukkan perkembangan pembentukan plak pada dinding dalam arteri.
Diagram 11.2 shows the development of the formation of plaque on the inner wall of artery.

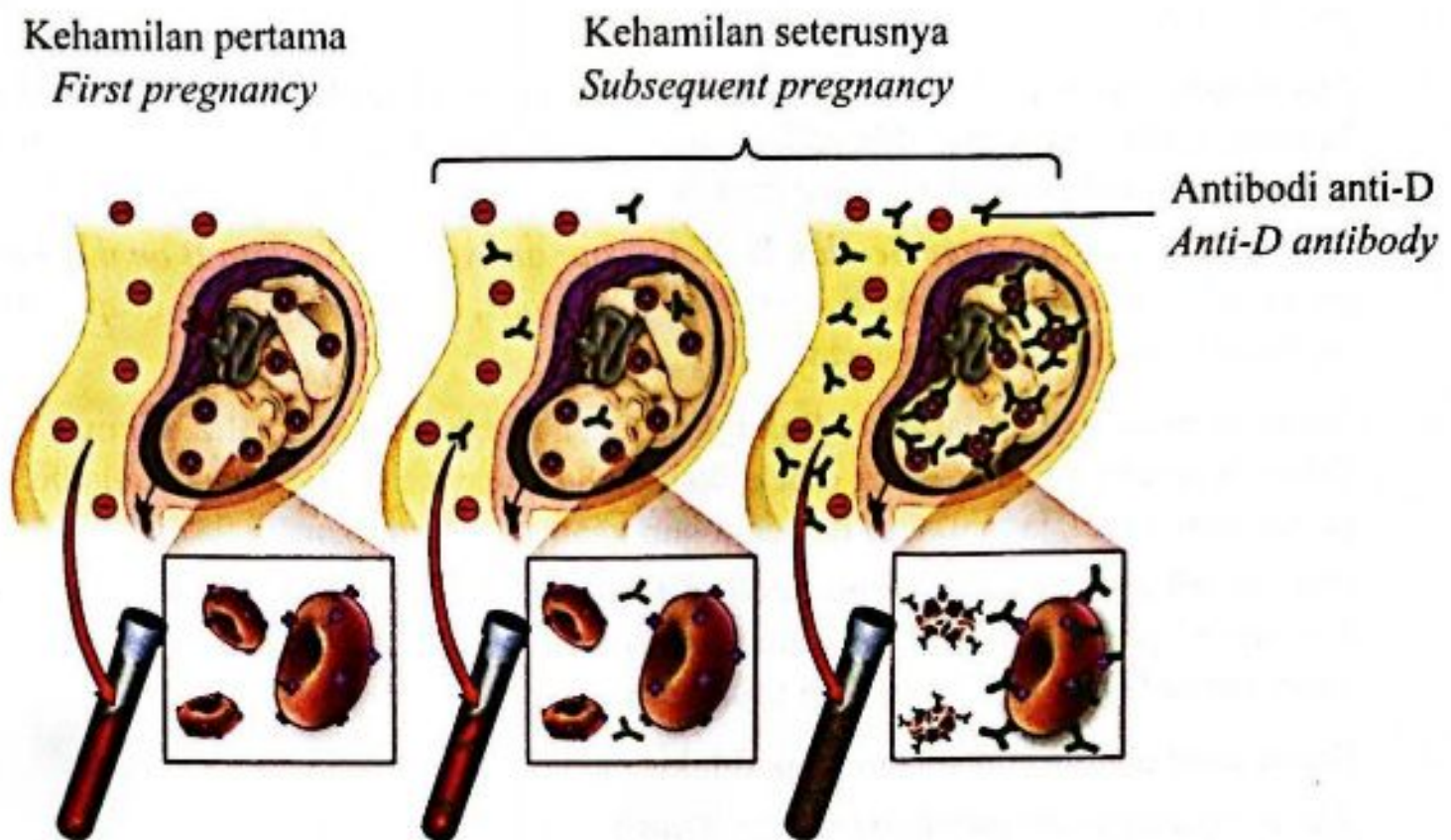


Rajah 11.2
 Diagram 11.2

- (i) Namakan penyakit yang berlaku kepada salur darah tersebut dan bahan yang membentuk plak tersebut.
Name the disease that occurred to the blood vessel and the substance that formed the plaque.
- [2 markah]
 [2 marks]
- (ii) Jika penyakit yang berlaku dalam Rajah 11.2 melibatkan arteri koronari, bincangkan kesan keadaan tersebut kepada sistem kardiovaskular.
If the disease that occurred in Diagram 11.2 involved coronary artery, discuss the effect of the condition to the cardiovascular system.
- [3 markah]
 [3 marks]

- (c) Rajah 11.3 menunjukkan keadaan yang dialami oleh ibu dan fetus semasa kehamilan. Ibu mempunyai kumpulan darah Rhesus negatif manakala fetus mewarisi kumpulan darah bapa iaitu Rhesus positif.

Diagram 11.3 shows the situation experienced by the mother and foetus during pregnancy. Mother has Rhesus negative blood group while the foetus inherited father's blood group which is Rhesus positive.



Rajah 11.3
Diagram 11.3

- (i) Bincangkan mengapa fetus pada kehamilan seterusnya mengalami komplikasi yang teruk berbanding fetus pada kehamilan pertama.

Discuss why foetus in the subsequent pregnancy undergoes severe complication than foetus in the first pregnancy.

[6 markah]
[6 marks]

- (ii) Cadangkan rawatan yang perlu diambil oleh ibu bagi mengatasi masalah berkaitan faktor Rhesus semasa kehamilan akibat kumpulan darah ibu dan anak yang berbeza.

Suggest the treatment that should be taken by the mother to overcome the problem related to Rhesus factor during pregnancy due to different blood group of mother and child.

[4 markah]
[4 marks]

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER