

Bahagian A
Section A

[60 markah]

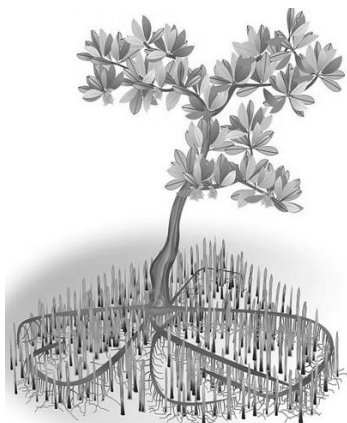
[60 marks]

Jawab **semua** soalan dalam bahagian ini.

*Answer **all** questions in this section.*

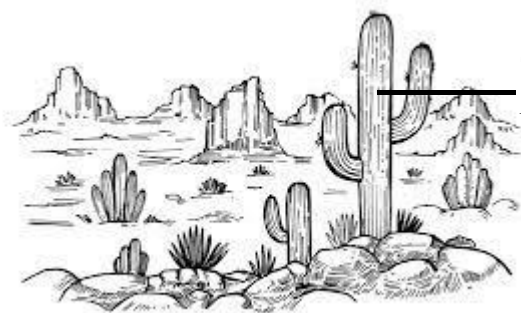
1. Rajah 1 menunjukkan dua jenis tumbuhan.

Diagram 1 shows two types of plants.



Tumbuhan A

Plant A



Tumbuhan B

Plant B

Rajah 1

Diagram 1

- (a) Kelaskan kedua-dua tumbuhan tersebut berdasarkan habitatnya.

Classify both plants based on its habitat.

Tumbuhan A:

Plant A

Tumbuhan B:

Plant B

[2 markah]

[2 marks]

- (b) (i) Namakan habitat bagi tumbuhan A.

Name the habitat for plant A.

.....

[1 markah]

[1 mark]

1(a)

2

1(b)(i)

1

- (ii) Terangkan ciri penyesuaian tumbuhan A untuk mengurangkan kadar transpirasi.
Explain the adaptation of plant A to reduce the rate of transpiration.

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

[2 markah]
[2 marks]

1(b)(ii)

	2
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- (c) Terangkan peranan penyesuaian daun berbentuk duri dalam tumbuhan B.
Explain the role of modification leaves into thorns in plant B.

.....
.....

[1 markah]
[1 mark]

1(c)

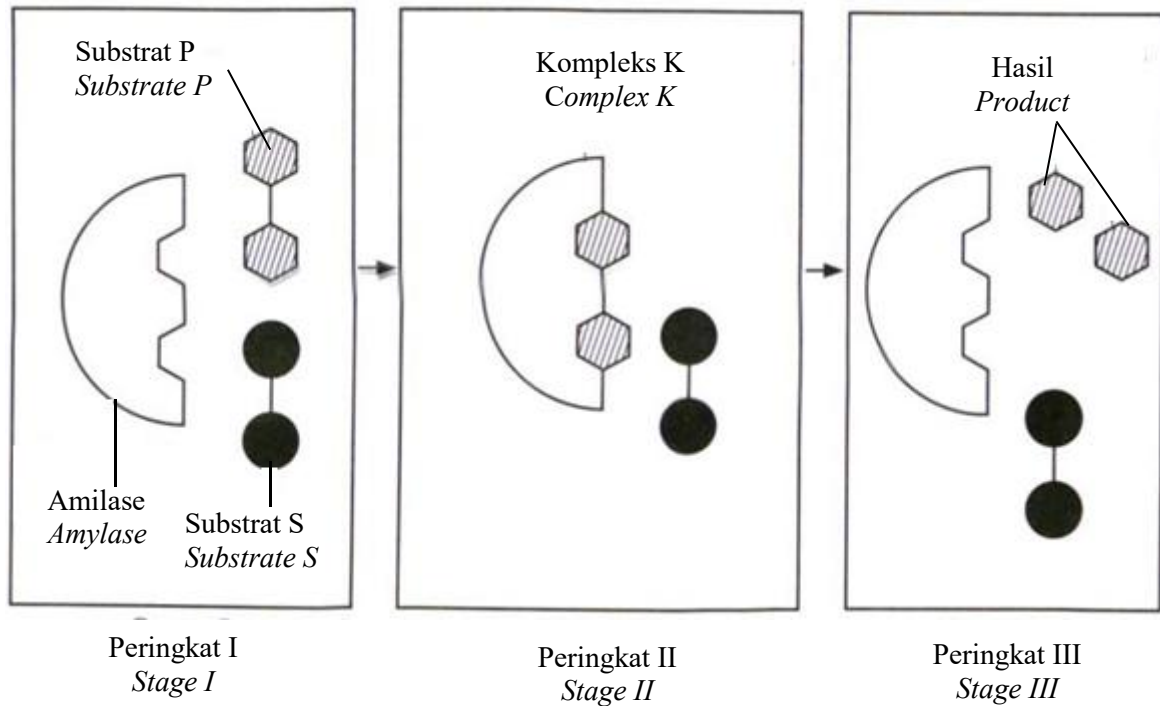
	1
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Total
A1

	6
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2. Rajah 2.1 menunjukkan peringkat-peringkat dalam tindak balas enzim amilase.

Diagram 2.1 shows the stages in the reaction of enzyme amylase.



Rajah 2.1

Diagram 2.1

2(a)

1

- (a) Berdasarkan Rajah 2.1, namakan

Based on Diagram 2.1, name

Kompleks K :
Complex K

[1 markah]

[1 mark]

- (b) Nyatakan jenis enzim untuk amilase.

State the type of enzyme for amylase.

.....

[1 markah]

[1 mark]

2(b)

1

- (c) Substrat S tidak dapat bergabung dengan enzim amilase untuk membentuk kompleks K. Terangkan mengapa.

Substrate S is not able to combine with enzyme amylase to form complex K. Explain why.

.....

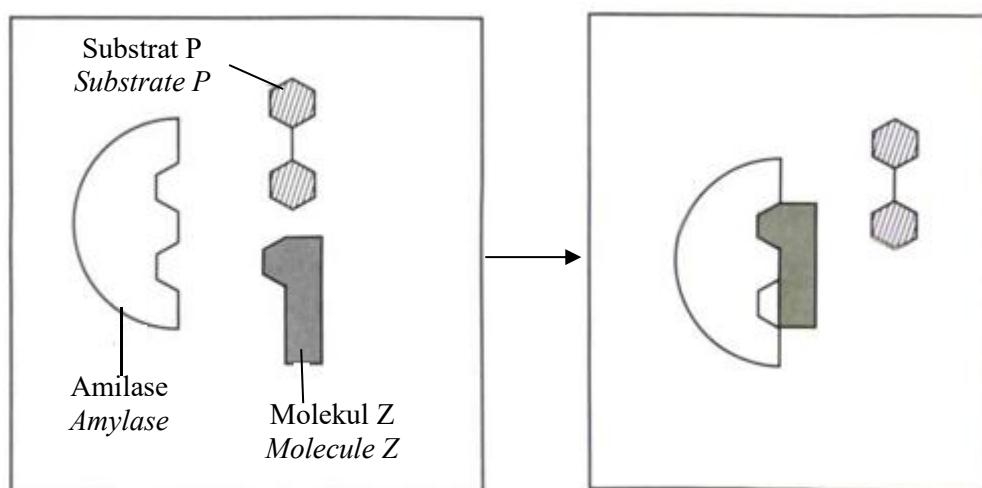
.....

.....

[2 markah]
[2 marks]

- (d) Rajah 2.2 menunjukkan tindakan molekul Z ke atas amilase.

Diagram 2.2 shows the action of molecule Z on amylase.



Rajah 3.2
Diagram 3.2

Apakah kesan kehadiran molekul Z ke atas aktiviti enzim amilase?

What is the effect of presence molecule Z on the amylase activity?

.....

.....

.....

.....

[2 markah]
[2 marks]

2(c)

2

2(b)

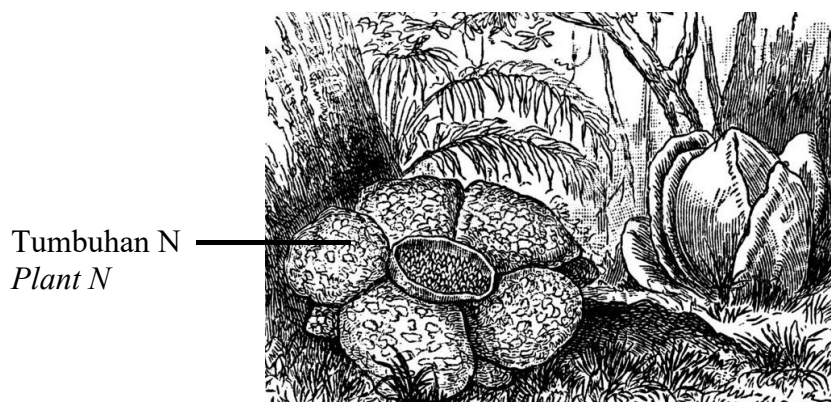
2

**Total
A2**

6

3. Rajah 3.1 menunjukkan tumbuhan N yang hidup pada organisma hidup yang lain.

Diagram 3.1 shows plant N that lives on other living organism.



Rajah 3.1

Diagram 3.1

- (a) Namakan organ pada tumbuhan N yang terlibat dalam pengambilan air dan bahan organik.

Name organ in plant N that involved in uptaking water and organic substances.

.....

[1 markah]

[1 mark]

3(a)

1

3(b)(i)

1

- (b) (i) Namakan penyesuaian nutrisi bagi tumbuhan N.

Name the nutritional adaptation of plant N.

.....

[1 markah]

[1 mark]

- (ii) Terangkan penyesuaian nutrisi tersebut.

Explain the adaptation.

.....

.....

.....

[2 markah]

[2 marks]

3(b)(ii)

2

- (c) Rajah 3.2 menunjukkan pokok U yang telah diberikan baja tidak organik yang mengandungi lebih banyak mikronutrien K berbanding pokok T.

Diagram 3.2 shows plant U was given inorganic fertiliser that contained more micronutrient K compared to plant T.



Pokok T
Plant T

Pokok U
Plant U

Rajah 3.2
Diagram 3.2

Bincangkan fungsi mikronutrien K terhadap pertumbuhan pokok tersebut.

Discuss the function of micronutrient K on growth of the plant.

.....

.....

.....

[3 markah]
[3 marks]

3(c)

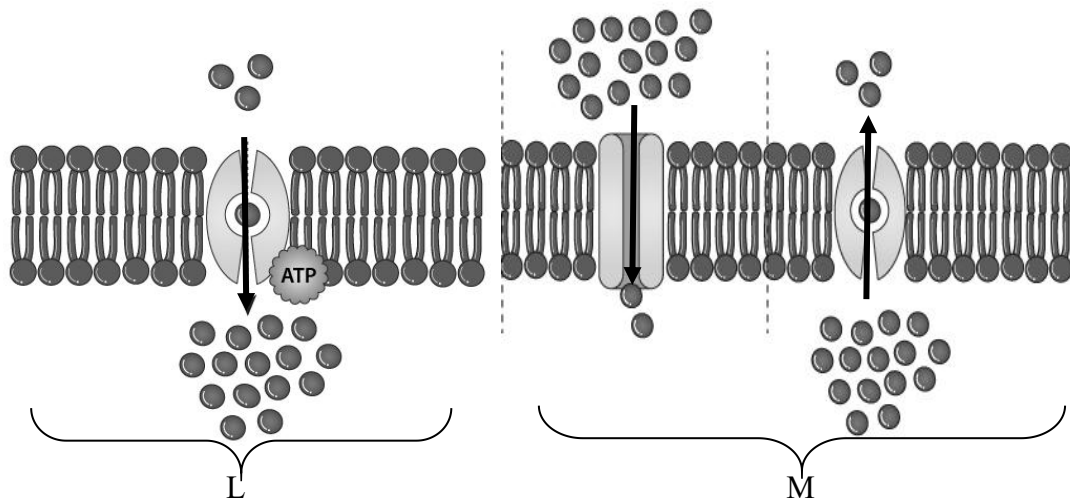
3

Total
A3

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4. Rajah 4 menunjukkan proses pergerakan bahan merentas membran plasma.

Diagram 4 shows a process of movement of substances across the plasma membrane.



Rajah 4

Diagram 4

4(a)(i)

	2
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- (a)(i) Berdasarkan Rajah 4, namakan jenis pergerakan tersebut.

Based on Diagram 4, name the type of movement.

L:

M:

[2 markah]

[2 marks]

4(a)(ii)

	1
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- (ii) Nyatakan satu contoh bahan yang dapat merentasi membran plasma pada M.

State one example of substance that able to move across plasma membrane at M.

.....

[1 markah]

[1 mark]

(b) Bezakan kedua-dua proses L dan M.

Differentiate both processes L and M.

L	M

[2 markah]
[2 marks]

4(b)

	2
--	---

(c) Setelah bermain futsal, anda berasa dahaga dan menyedari kehilangan air dan elektrolit seperti kalium dan natrium melalui perpeluhan. Cadang dan terangkan strategi untuk menggantikan kehilangan kedua-dua bahan tersebut.

After playing futsal, you felt thirsty and realised that lost of water and electrolytes such as potassium and sodium through perspiration. Suggest and explain strategy to recover the lost of those substances.

.....

.....

.....

[2 markah]
[2 marks]

4(c)

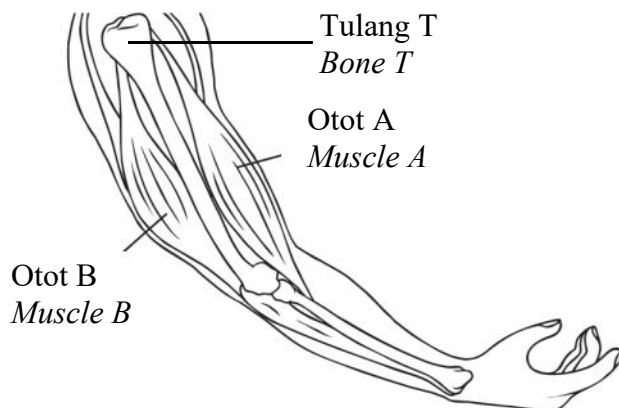
	2
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Total
A4

	7
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5. Rajah 5.1 menunjukkan pergerakan lengan yang melibatkan tisu yang berbeza.

Diagram 5.1 shows a movement of forearm involves different tissues.



Rajah 5.1

Diagram 5.1

- (a) Berdasarkan Rajah 5.1, namakan jenis rangka dan tulang T

Based on Diagram 5.1, name type of skeleton and bone T

Jenis rangka :

Type of skeleton

Tulang T :

Bone T

[2 markah]

[2 marks]

- (b) Terangkan bagaimana kedua-dua otot A dan B berfungsi seperti pergerakan lengan yang ditunjukkan dalam Rajah 5.1.

Explain how both muscles A and B work as the movement of the forearm shown in Diagram 5.1.

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

[2 markah]

[2 marks]

5(a)

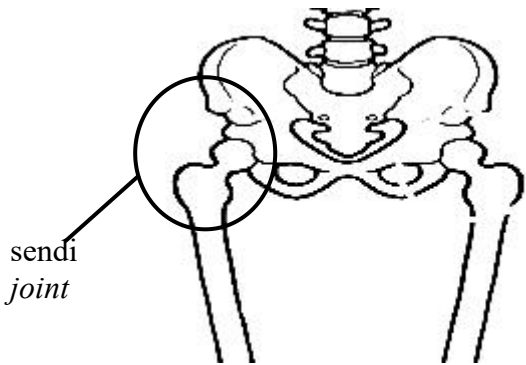
2

5(b)

2

(c) Rajah 5.2 menunjukkan sejenis sendi pada manusia.

Diagram 5.2 shows a type of joint in human.



Rajah 5.2
Diagram 5.2

Terangkan kesan jika sendi seperti Rajah 5.2 mengalami kerosakan.

Explain the effect if joint as shown in Diagram 5.2 is damaged.

.....

.....

.....

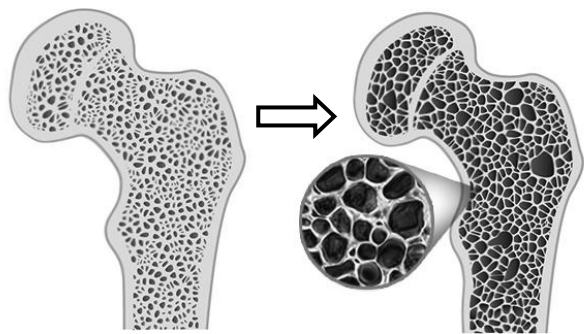
[2 markah]
[2 marks]

5(c)

2

(d) Rajah 5.3 menunjukkan perubahan struktur dalam tulang seorang wanita yang mengalami putus haid yang menyebabkan masalah kesihatan.

Diagram 5.3 shows the changes of bone internal structure of a woman who reach menopause that causes health problem.



Rajah 5.3

Diagram 5.3

Cadangkan amalan yang boleh dilakukan untuk mengatasi masalah kesihatan tersebut.

Suggest practices that can be carried out to overcome the health problem.

.....

.....

.....

[2 markah]
[2 marks]

5(d)

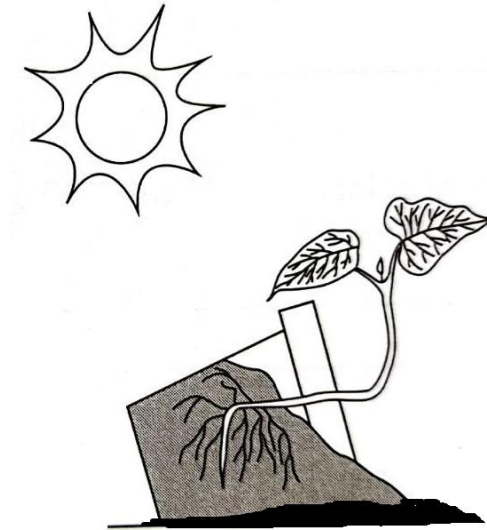
2

Total
A5

8

6. Rajah 6.1 menunjukkan keadaan satu tumbuhan di dalam pasu yang pecah dan terbalik secara mengiring selepas satu bulan.

Diagram 6.1 shows the condition of a plant in a broken pot that is upside down after one month.



Rajah 6.1

Diagram 6.1

- (a) (i) Kenalpasti **dua** jenis gerak balas yang ditunjukkan oleh tumbuhan tersebut.

*Identify the **two** types of response that shown by the plant.*

.....

[2 markah]
[2 marks]

6(a)(i)

2

- (ii) Nyatakan fitohormon yang terlibat dalam gerak balas di (a)(i).

State the phytohormones that involved in the responses in (a)(i).

.....

[1 markah]
[1 mark]

6(a)(ii)

1

- (b) Berdasarkan Rajah 6.1, terangkan bagaimana hujung pucuk bergerak balas terhadap rangsangan apabila didedahkan kepada cahaya.

Based on Diagram 6.1, explain how shoot tips response to stimuli when exposed to light.

.....

.....

.....

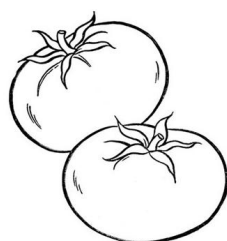
[2 markah]

[2 marks]

- (c) Rajah 6.2 menunjukkan dua situasi tomato matang, situasi P dan situasi Q. Pemasakan tomato tersebut dipengaruhi oleh fitohormon.

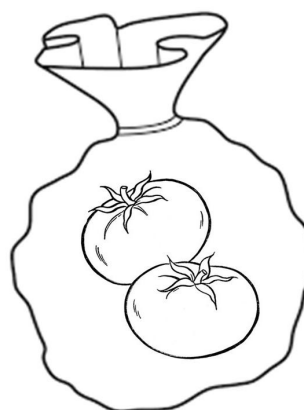
Diagram 6.2 shows two situations of mature tomatoes, situation X and situation Y.

The ripening of tomatoes is influenced by phytohormones.



Situasi P

Situation P



Situasi Q

Situation Q

Rajah 6.2

Diagram 6.2

- (i) Berdasarkan Rajah 6.2, nyatakan tomato dalam situasi manakah yang akan masak terlebih dahulu.

Based on Diagram 6.2, state which tomatoes in diagram ripening first?

.....

[1 markah]

[1 mark]

6(c)(i)

1

(ii) Berdasarkan jawapan anda di (c)(i), huraikan peranan fitohormon dalam pemasakan tomato.

Based on your answer in (c)(i), describe the role of phytohormones in ripe tomato.

.....

.....

.....

[2 markah]
[2 marks]

6(c)(ii)

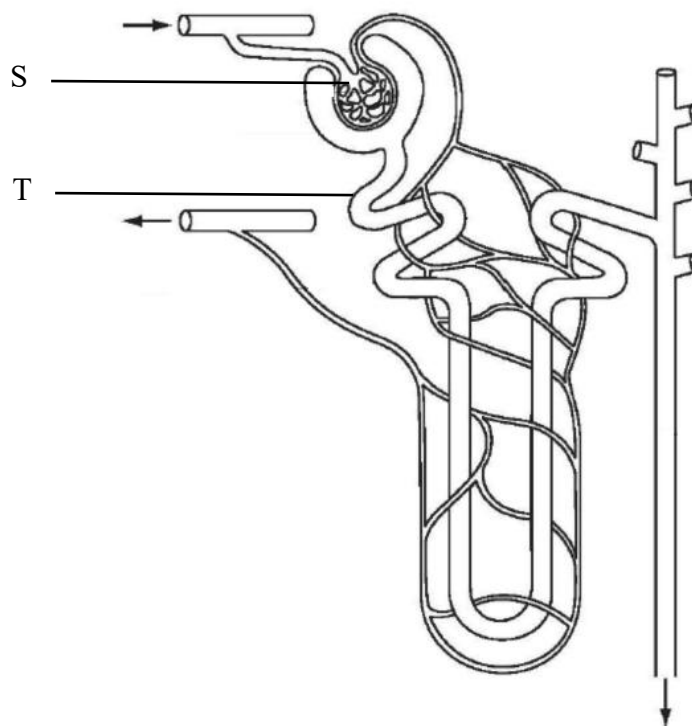
2

Total
A6

8

7. Rajah 7 menunjukkan struktur satu nefron di dalam ginjal.

Diagram 7 shows the structure of nephron in a kidney.



Rajah 7

Diagram 7

- (a) Namakan struktur berlabel S dan T.

Name the structure label S and T.

7(a)

	2
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S:

T:

[2 markah]
[2 marks]

- (b) (i) Berdasarkan Rajah 7, nyatakan proses yang berlaku di T.

Based on Diagram 7, state the process that happens in T.

7(b)(i)

	1
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.....

[1 markah]
[1 mark]

- (ii) Terangkan bagaimana hasil turasan daripada sturuktur S diangkut ke dalam kapilari darah daripada T.

Explain how the filtrate from the structure S is transported inside the blood capillaries from T.

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

[3 markah]
[3 marks]

7(b)(ii)

3

- (c) Seorang pesakit telah didiagnosiskan mempunyai masalah batu karang di dalam ginjalnya. Wajarkan **satu** sebab mengapa pesakit tersebut menghadapi masalah kesihatan seperti yang dinyatakan dan kesan masalah tersebut terhadap kesihatan beliau.

*A patient has been diagnosed with a kidney stone problem. Justify **one** reason why the patient has the health problem as stated and the effect of the problem on his health.*

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

[3 markah]
[3 marks]

7(c)

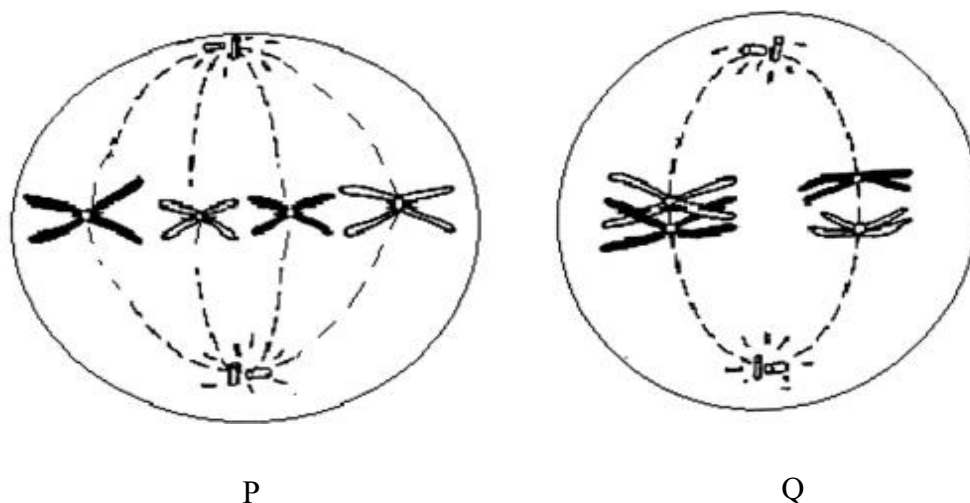
3

Total
A7

9

8. Rajah 8.1 menunjukkan dua sel haiwan yang menjalani pembahagian sel P dan pembahagian sel Q.

Diagram 8.1 shows two animal cells undergoing cell divisions P and Q.



Rajah 8.1
Diagram 8.1

(a) Namakan jenis pembahagian sel P dan pembahagian sel Q.

Name the type of cell divisions P and Q.

P :

Q :

[2 markah]
[2 marks]

(b) Pembahagian sel Q adalah penting dalam pembiakan seks. Pembahagian sel ini memastikan bilangan kromosom dikekalkan dari satu generasi ke generasi yang seterusnya. Terangkan bagaimana ini berlaku.

Cell division Q is important in sexual reproduction. The cell division ensures the diploid number of chromosomes is maintained from one generation to another.

Explain how this occur.

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

[2 markah]
[2 marks]

8(a)

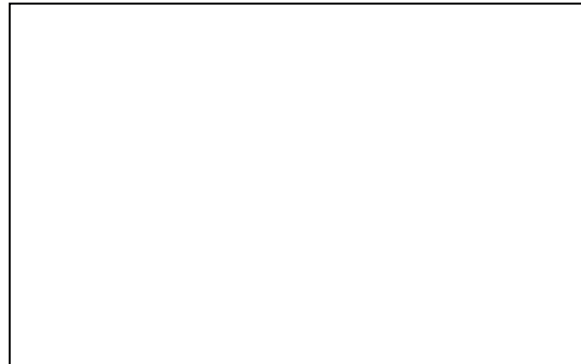
2

8(b)

2

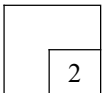
(c) Dalam ruang di bawah, lukis dan label peringkat selepas P.

In the space below, draw and labelled the stage after P.



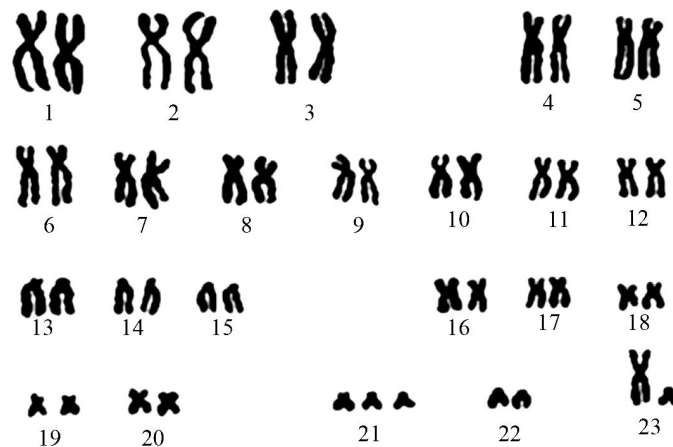
[2 markah]
[2 marks]

8(c)



(d) Rajah 8.2 menunjukkan set lengkap kromosom seorang individu.

Diagram 8.2 shows a complete set of an individual chromosomes.



Rajah 8.2

Diagram 8.2

(i) Nyatakan penyakit genetik yang dihidapi oleh individu tersebut.

State the genetic disorder suffered by the individual.

.....

[1 markah]
[1 mark]

8(d)(i)



(ii) Terangkan bagaimana individu ini boleh menghadapi penyakit genetik tersebut.

Explain how the individual get the genetic disease.

.....

.....

.....

[2 markah]
[2 marks]

8(d)(ii)

	2
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Total
A8

	9
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Bahagian B
Section B

[20 markah]

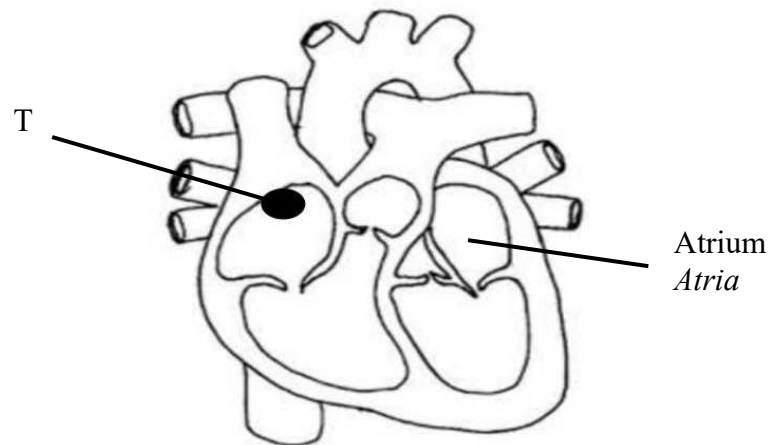
[20 marks]

Jawab mana-mana **SATU** soalan sahaja.

*Answer any **ONE** question only.*

9. Rajah 9 menunjukkan struktur jantung manusia.

Diagram 9 shows a structure of human heart.



Rajah 9

Diagram 9

(a) (i) Namakan struktur berlabel T dan nyatakan fungsinya.

Name the T structure and state its function.

[2 markah]

[2 marks]

(ii) Bincangkan bagaimana T berfungsi dalam pengepaman jantung.

Discuss how does T work in the pumping of the heart.

[4 markah]

[4 marks]

- (b) Pernyataan berikut menerangkan tentang punca-punca penyakit kardiovaskular.

The following statements describe the cause of cardiovascular diseases.

Merokok, mengamalkan diet tidak seimbang dan mengamalkan gaya hidup yang tidak sihat menyebabkan penyakit kardiovaskular.

Smoking, consuming unbalanced diet and practising unhealthy lifestyle lead to cardiovascular diseases.

Bincangkan mengenai pernyataan di atas.

Discuss about the statement above.

[10 markah]

[10 marks]

- (c) Banding dan bezakan antara bendalir tisu dengan limfa.

Compare and contrast between tissue fluid and lymph.

[4 markah]

[4 marks]

10. (a)(i) Apakah yang dimaksudkan dengan variasi? Berikan satu contoh.

What is variation? Give one example.

[2 markah]

[2 marks]

(ii) Nyatakan kepentingan variasi pada organisma.

State the importance of variation in organisms.

[4 markah]

[4 marks]

(b)(i) Jadual 1.1 dan Jadual 1.2 menunjukkan taburan ketinggian dan kumpulan darah dalam kalangan sekumpulan murid.

Table 1.1 and Table 1.2 show height and blood group pattern distribution among a group of students.

Ketinggian <i>Height (cm)</i>	Bilangan murid <i>Number of students</i>
≤ 150	5
150-155	3
156-160	7
161-165	4
166-170	9

Jadual 1.1
Table 1.1

Kumpulan darah <i>Blood group</i>	Bilangan murid <i>Number of students</i>
A	3
B	9
AB	6
O	7

Jadual 1.2
Table 1.2

Huraikan perbezaan antara jenis variasi dalam Jadual 1.1 dan Jadual 1.2.

Describe the differences between the type of variation in Table 1.1 and Table 1.2

[6 markah]

[6 marks]

(ii) Bincangkan secara ringkas pengaruh faktor persekitaran terhadap variasi.

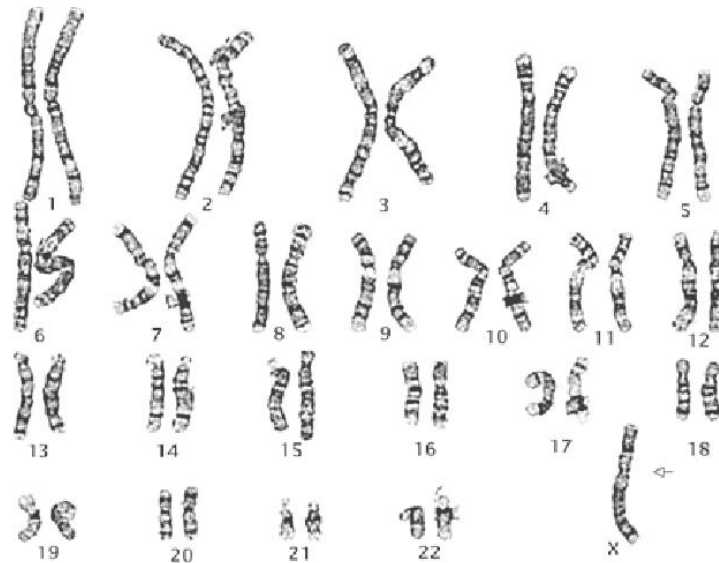
Briefly discuss the influence of environmental factors on variation.

[4 markah]

[4 marks]

(c) Rajah 10.1 menunjukkan kariotip seorang individu yang telah mengalami mutasi.

Diagram 10.1 shows the karyotype of an individual who has experienced mutation.



Rajah 10.1

Diagram 10.1

Berdasarkan Rajah 10.1, terangkan jenis mutasi dan ciri-ciri penyakit.

Based on Diagram 10.1, explain the types of mutations and disease characteristics.

[4 markah]
[4 marks]

Bahagian C
Section C

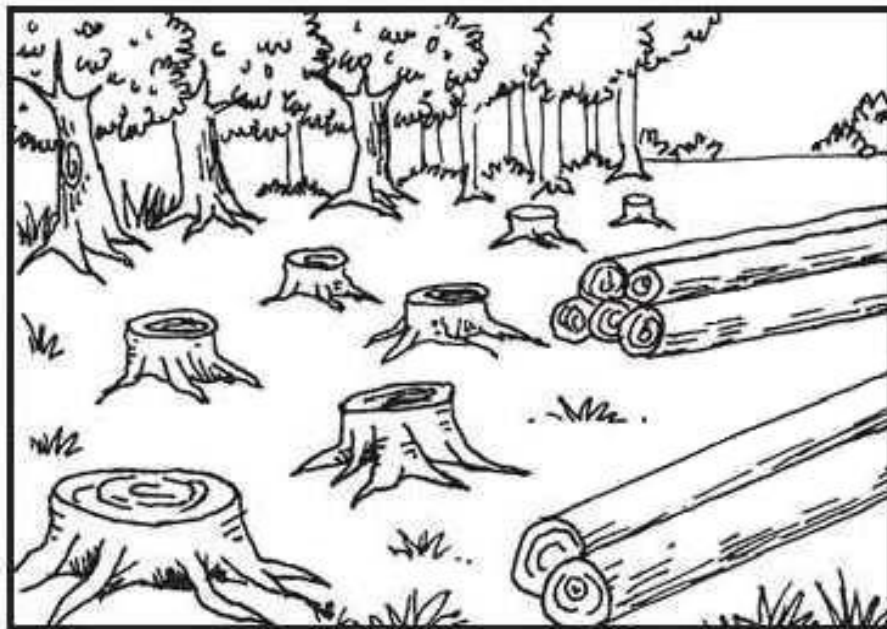
[20 markah]

[20 marks]

Jawab **SEMUA** soalan
*Answer **ALL** the questions*

11. (a) Rajah 11.1 menunjukkan satu aktiviti manusia yang menyumbang kepada kemusnahan kawasan hutan.

Diagram 11.1 shows a human activity that contributes to deforestation of forest area.



Rajah 11.1

Diagram 11.1

Terangkan bagaimana aktiviti dalam Rajah 11.1 di atas menyebabkan pemanasan global.

Explain how the activities in Diagram 11.1 above cause global warming.

[3 markah]

[3 marks]

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- (b) Rajah 11.2 menunjukkan seorang petani menaburkan baja ke kawasan sawah padinya.

Diagram 11.2 shows a farmer spreading fertilizer on his paddy field.



Rajah 11.2

Diagram 11.2

Bincangkan bagaimana aktiviti dalam Rajah 11.2 memberi kesan terhadap alam sekitar.

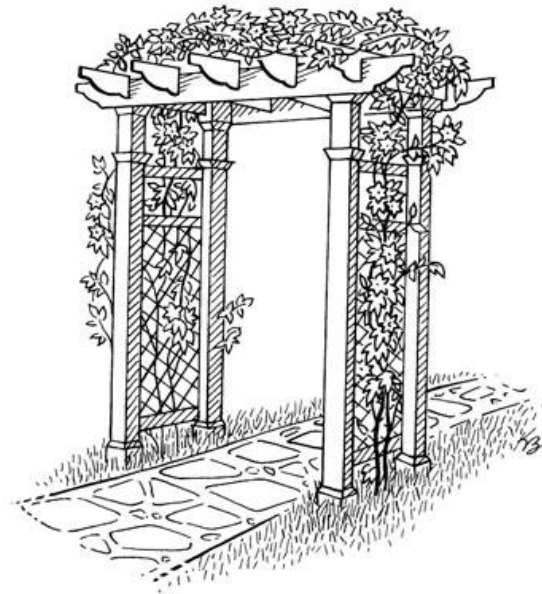
Discuss how the activities in Diagram 11.2 affect the environment.

[7 markah]

[7 marks]

(c) Rajah 11.3 menunjukkan taman vertikal di satu tempat membeli-belah.

Diagram 11.3 shows a vertical garden in a mall.



Rajah 11.3

Diagram 11.3

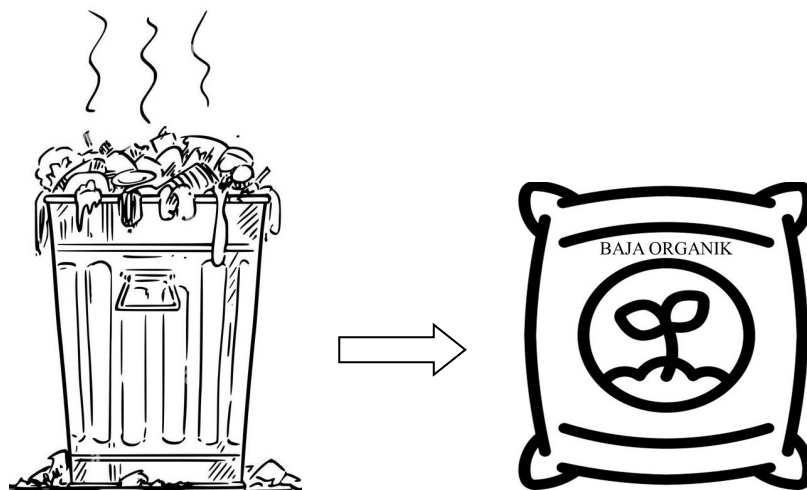
Pembinaan taman vertikal seperti Rajah 11.3 amat digalakkan dalam pembinaan di kawasan perumahan. Wajarkan kebaikan konsep taman vertikal itu.

The construction of vertical gardens such as Diagram 11.3 is highly encouraged in the construction of residential areas. Justify the advantages of the vertical garden concept.

[5 markah]
[5 marks]

- (d) Rajah 11.4 menunjukkan satu aplikasi Teknologi Hijau yang menggunakan sisa dapur dan sisa makanan.

Diagram 11.4 shows an application of Green Technology that uses kitchen waste and food waste.



Rajah 11.4

Diagram 11.4

Cadangkan amalan berkonsepkan Teknologi Hijau yang boleh dilakukan di rumah dalam mengatasi masalah pembuangan sisa pepejal makanan dalam kalangan masyarakat.

Suggest Green Technology concept practices that can be done at home in overcoming the problem of solid food waste disposal in the community.

[5 markah]

[5 marks]

KERTAS SOALAN TAMAT
END OF QUESTIONS PAPER