

Section A
Bahagian A

[60 marks]
[60 markah]

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

- 1 Diagram 1.1 shows a cross section of a leaf.
Rajah 1.1 menunjukkan satu keratan rentas sehelai daun.

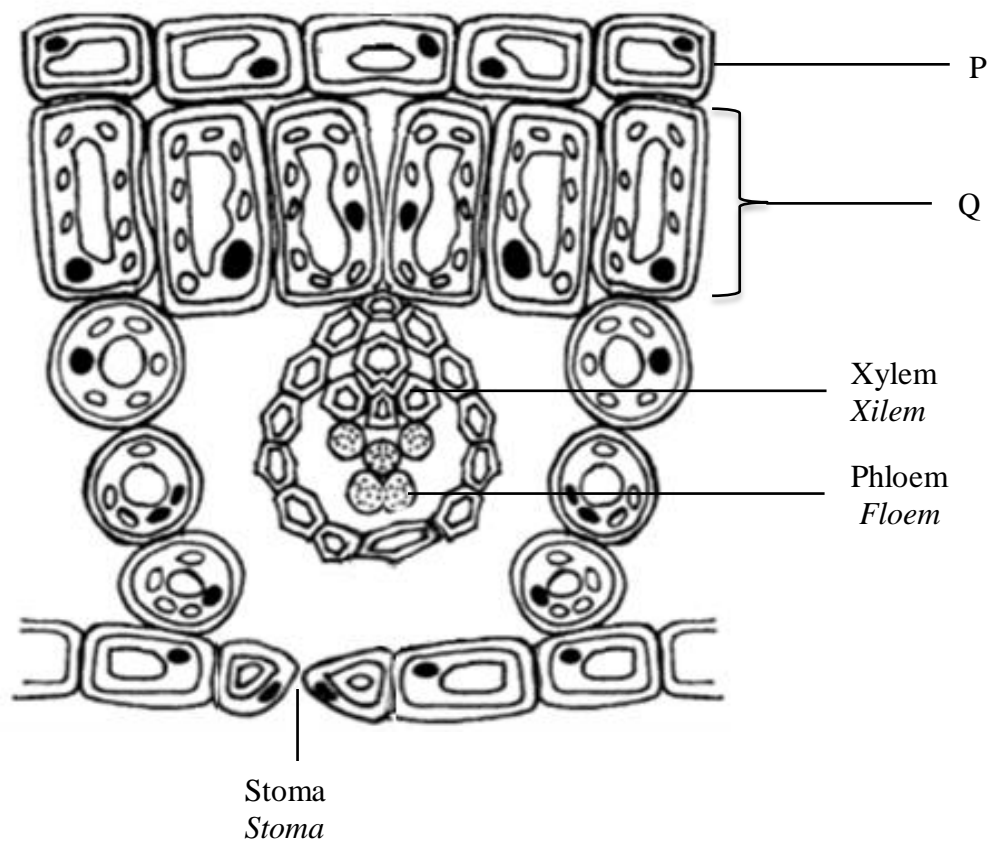


Diagram 1.1
Rajah 1.1

- (a) (i) State the level of cell organisation of the leaf.
Nyatakan peringkat organisasi sel bagi daun.

.....

[1 mark / markah]

1(a)(i)

1

- (a) (ii) Name the cell P and Q.

Namakan sel P dan sel Q.

P:

1(a)(ii)

Q:

[2 marks / markah]

2

- (b) Explain the adaptation of cell Q to function efficiently in photosynthesis.

Terangkan adaptasi sel Q untuk berfungsi dengan efisien semasa fotosintesis.

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[2 marks / markah]

1(b)

2

- (c) (i) State the function of xylem.

Nyatakan fungsi xilem.

.....

[1 mark / markah]

1(c)(i)

1

- (ii) State **two** differences in structure of phloem and xylem.

*Nyatakan **dua** perbezaan antara struktur floem dan xilem.*

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[2 marks / markah]

1(c)(ii)

2

[Lihat halaman sebelah

1(d)

- (d) Predict the effect to the plant if lignin is not synthesized.

Ramalkan kesan kepada tumbuhan jika lignin tidak disintesis.

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[2 marks / markah]

- (e) Diagram 1.2 shows the structure of stoma during day time.

Rajah 1.2 menunjukkan struktur stoma semasa siang hari.

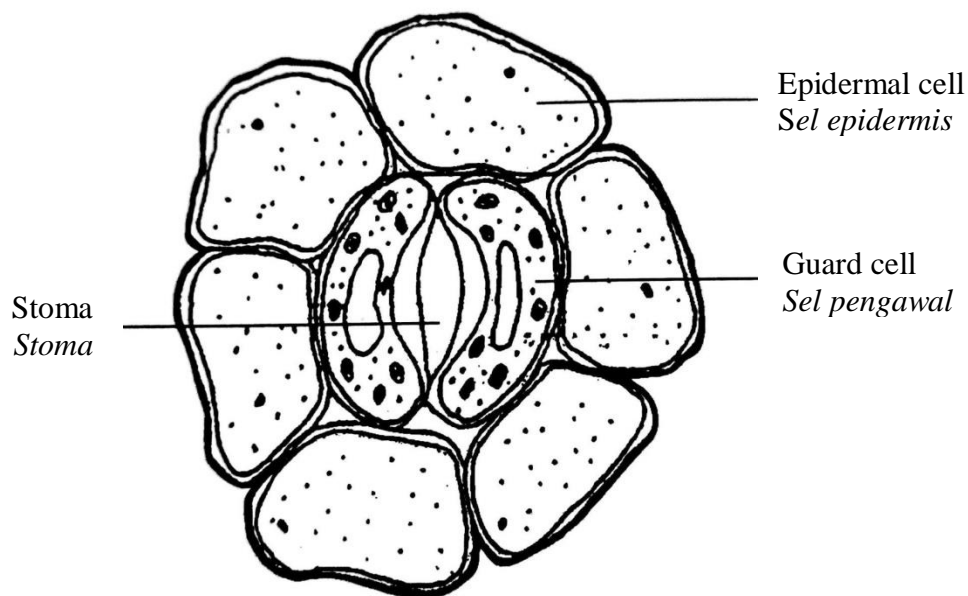


Diagram 1.2

Rajah 1.2

Explain how light intensity affects the opening of stoma.

Terangkan bagaimana keamatan cahaya mempengaruhi pembukaan stoma.

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[2 marks / markah]

1(e)

Total
A1

12

- 2 Diagram 2.1 shows the different levels of organisation in protein structure.
Rajah 2.1 menunjukkan aras organisasi berlainan di dalam struktur protein.

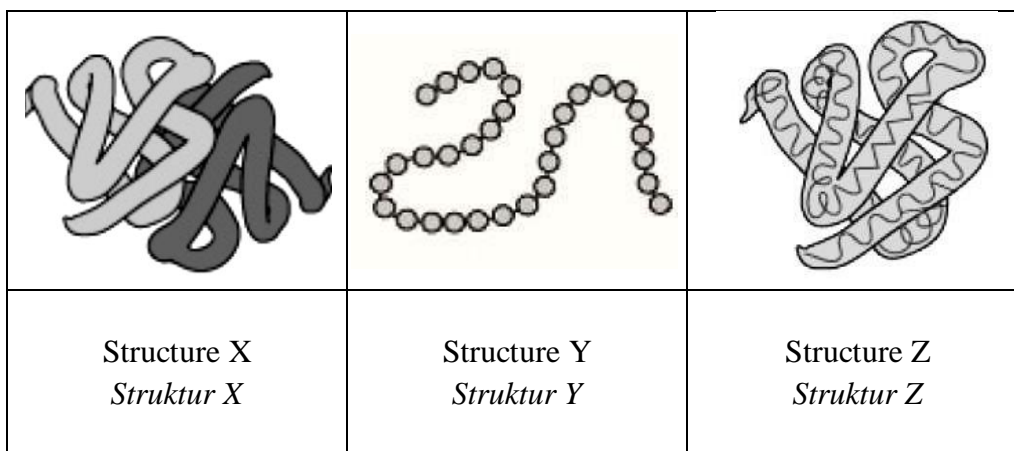


Diagram 2.1
Rajah 2.1

- (a) (i) Based on Diagram 2.1, name the level of organisation in the protein structure of X and Z.

Berdasarkan Rajah 2.1, namakan aras organisasi di dalam struktur protein X dan Z.

X:

Z:

[2 marks / markah]

2(a)(i)

| | |
|--|---|
| | 2 |
|--|---|

- (ii) Explain the level of organisation of protein which forms the enzyme.

Terangkan aras organisasi bagi struktur protein yang membentuk enzim.

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[2 marks / markah]

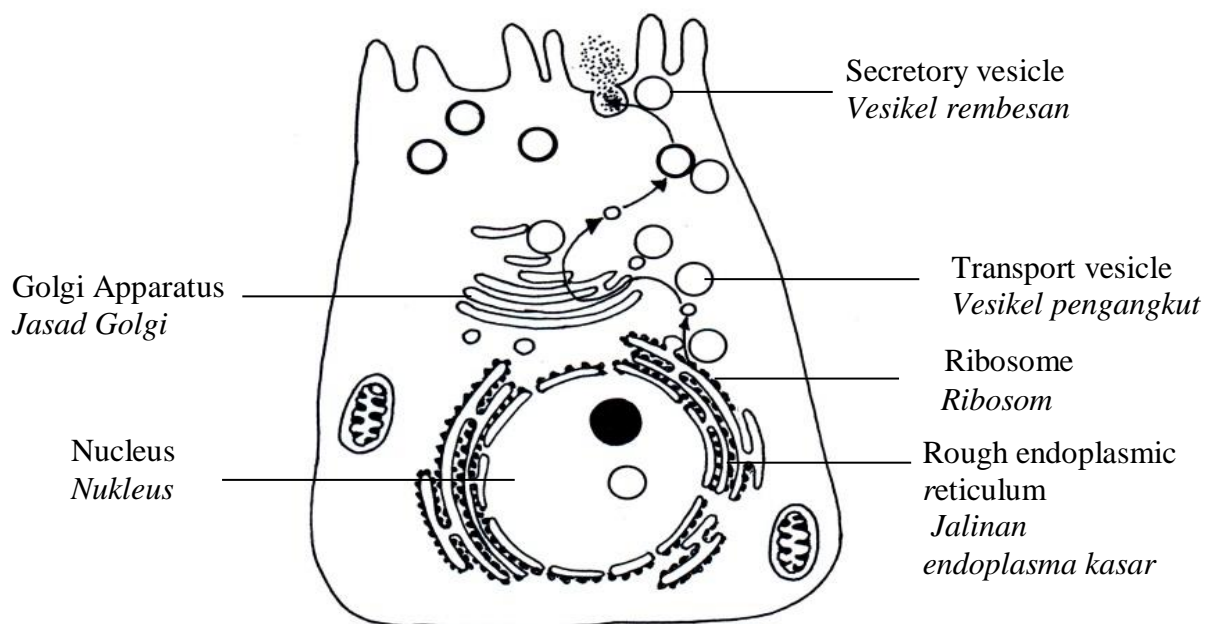
2(a)(ii)

| | |
|--|---|
| | 2 |
|--|---|

[Lihat halaman sebelah

- (b) Diagram 2.2 shows the organelles involved during the synthesis of an extracellular enzyme.

Rajah 2.2 menunjukkan organel- organel yang terlibat semasa sintesis enzim luar sel.



- (i) Explain the formation of extracellular enzyme.

Terangkan pembentukan enzim luar sel.

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.....

[3 marks / markah]

2(b)(i)

3

- (b) (ii) Give **one** example of the extracellular enzyme in human digestive system. State the function of the enzyme.

*Berikan **satu** contoh enzim luar sel di dalam sistem pencernaan manusia. Nyatakan fungsi enzim tersebut.*

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.....

[2 marks / markah]

2(b)(ii)

2

- (c) Diagram 2.3 shows a gene mutation that occurs in the DNA strand containing the base sequence CTC.

Rajah 2.3 menunjukkan mutasi gen yang berlaku pada rantai DNA mengandungi urutan bes CTC.

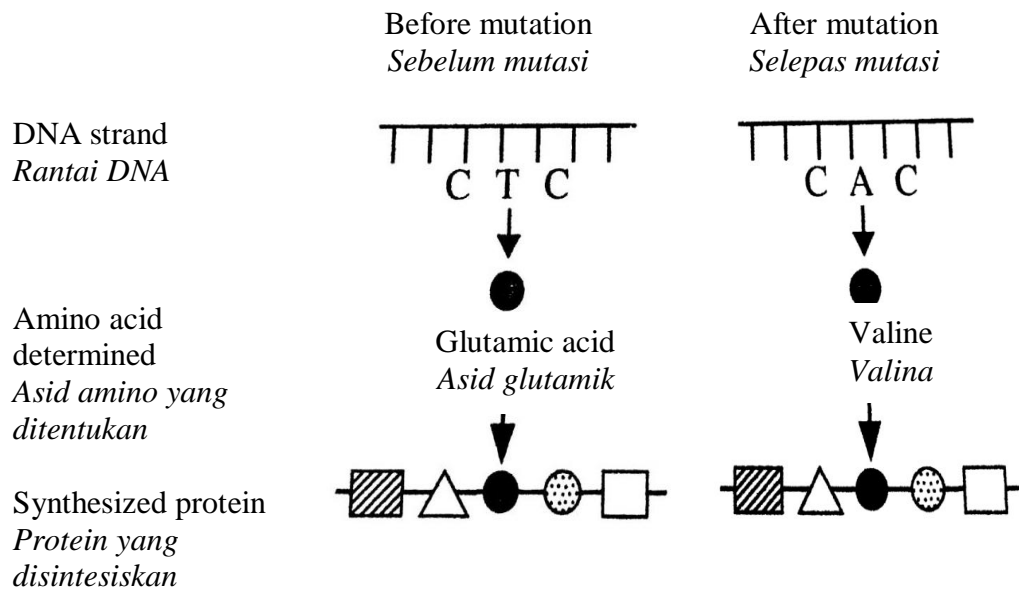


Diagram 2.3
Rajah 2.3

[Lihat halaman sebelah

Based on Diagram 2.3, discuss how the mutation affects the formation of the enzyme.

Berdasarkan Rajah 2.3, bincangkan bagaimana mutasi ini memberi kesan terhadap pembentukan enzim.

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[3 marks / markah]

2(c)

| |
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| |
| 3 |

**Total
A2**

| |
|----|
| |
| 12 |

- 3 Diagram 3.1 shows cell X and cell Y undergo two different types of cell division.

Rajah 3.1 menunjukkan sel X dan sel Y mengalami dua jenis pembahagian sel yang berbeza.

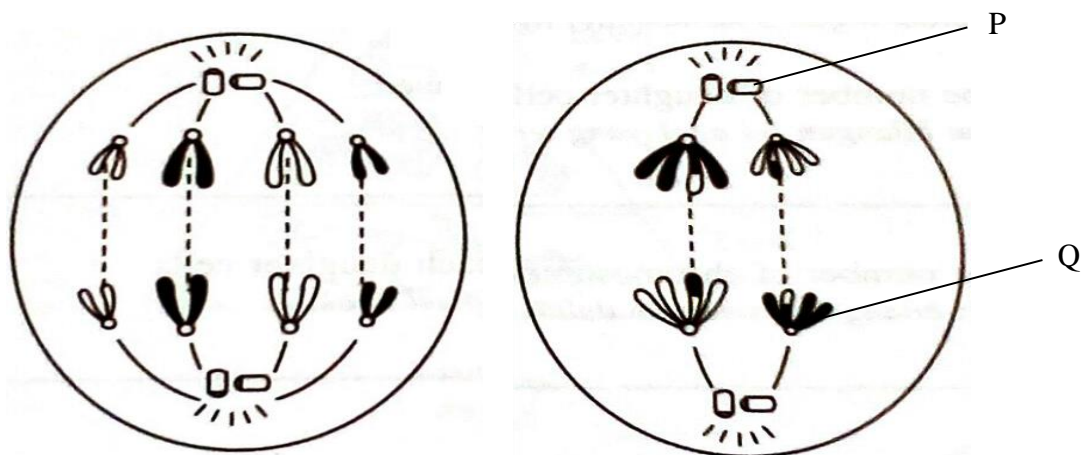


Diagram 3.1

Rajah 3.1

- (a) (i) Name the structures labelled P and Q.

Namakan struktur berlabel P dan Q.

P:

Q:

[2 marks / markah]

3(a)(i)

| |
|---|
| 2 |
|---|

- (ii) State **one** function of P.

*Nyatakan **satu** fungsi P.*

.....

[1 mark / markah]

3(a)(ii)

| |
|---|
| 1 |
|---|

[Lihat halaman sebelah

- (a) (iii) State the importance of cell division in X and Y.

Nyatakan kepentingan pembahagian sel dalam X dan Y.

3(a)(iii)

X:

Y:

[2 marks / markah]

- (b) (i) Based on Diagram 3.1, state **two** differences in cell division between cell X and cell Y.

*Berdasarkan Rajah 3.1, nyatakan **dua** perbezaan dalam pembahagian sel antara sel X dan sel Y.*

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[2 marks / markah]

- (ii) Cell Y has been exposed to gamma rays which results in the failure of formation of spindle fibre.

Sel Y telah terdedah kepada sinar gama yang menyebabkan kegagalan penghasilan gentian gelendung.

Explain the effect to the formation of daughter cells of cell Y.

Terangkan kesan kepada pembentukan sel anak dari sel Y.

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[2 marks / markah]

3(b)(ii)

- (c) Diagram 3.2 shows the growth of a lizard's tail after being cut off.

Rajah 3.2 menunjukkan pertumbuhan ekor cicak setelah terputus.

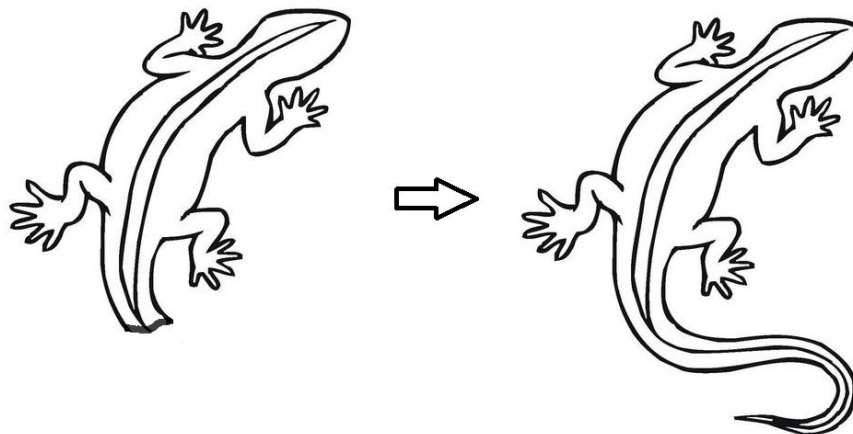


Diagram 3.2
Rajah 3.2

Explain the process above.

Terangkan proses di atas.

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[3 marks / markah]

3(c)

| | |
|--|---|
| | 3 |
|--|---|

Total
A3

| | |
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| | 12 |
|--|----|

4 Diagram 4.1 shows a graph of a type of immunity.

Rajah 4.1 menunjukkan graf sejenis keimunan.

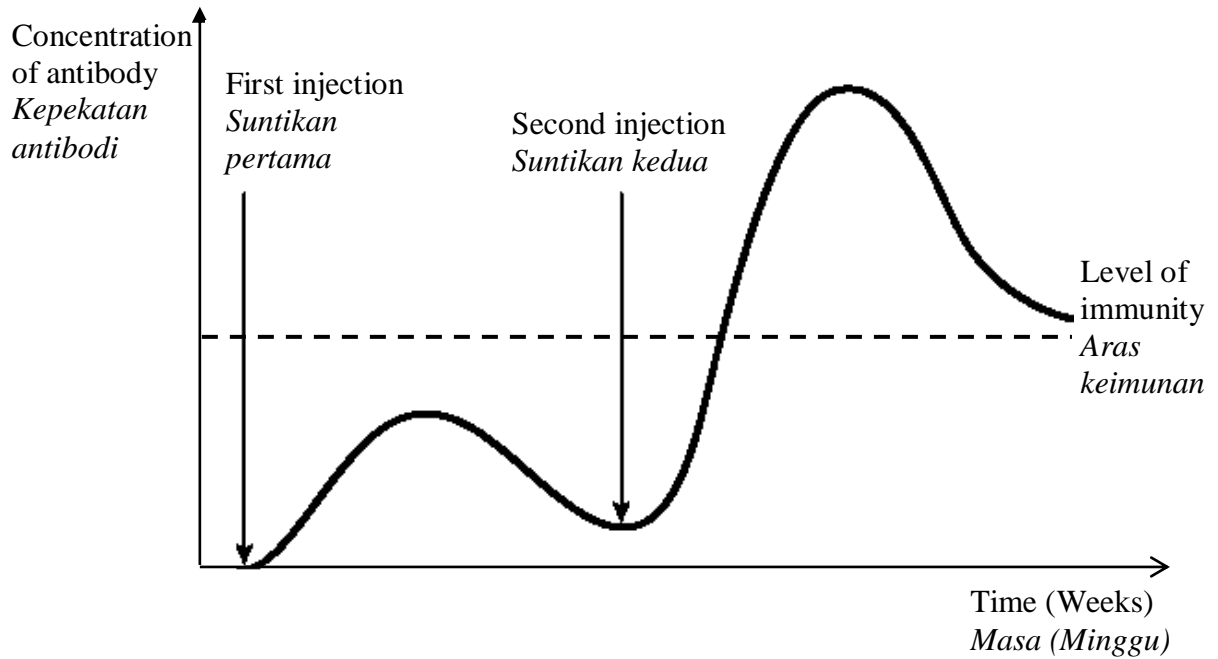


Diagram 4.1

Rajah 4.1

(a) (i) Name the type of immunity shown in Diagram 4.1.

Namakan jenis keimunan yang ditunjukkan dalam Rajah 4.1.

4(a)(i)

1

.....
[1 mark / markah]

(ii) Explain why the second injection is needed.

Terangkan mengapa suntikan kedua adalah perlu.

4(a)(ii)

3

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.....
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.....
[3 marks / markah]

- (iii) Give one example of a disease that can be protected by this type of immunity.

Berikan satu contoh penyakit yang boleh dilindungi dengan jenis keimunan ini.

.....
[1 mark / markah]

3(a)(iii)

1

- (b) The following is an article about the rabies outbreak in Sarawak.

Berikut merupakan suatu artikel tentang penularan wabak rabies di Sarawak.

THE Star ONLINE

Sunday, 9 Dec 2018

Two suspected rabies cases detected in Sarawak

KUCHING: Two new suspected rabies cases have been detected in Sarawak, including one who has died. Health director-general Datuk Dr Noor Hisham Abdullah said the first suspected case was a 64-year old man from Kuching who was bitten by a dog in mid-September.

THE Star ONLINE

Ahad, 9 Dis 2018

Dua kes penyakit rabies dikesan di Sarawak

KUCHING: Dua kes baharu wabak rabies telah dikesan di Sarawak termasuk seorang yang telah meninggal dunia. Ketua Pengarah Kesihatan Datuk Dr Noor Hisham Abdullah berkata kes pertama melibatkan seorang warga emas berumur 64 tahun yang telah digigit oleh anjing pada pertengahan September.

- (i) Based on your Biological knowledge, explain the treatment that should be given if a boy is bitten by a stray dog.

Berdasarkan pengetahuan Biologi anda, terangkan rawatan yang perlu diberikan jika seseorang budak lelaki digigit oleh anjing liar.

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.....
[2 mark / markah]

4(b)(i)

2

[Lihat halaman sebelah

4(b)(ii)

1

- (ii) State the type of immunity received by the boy in 4(b)(i).

Nyatakan jenis keimunan yang diperolehi oleh budak lelaki dalam 4(b)(i).

.....
[1 mark / markah]

- (iii) Give two differences between the type of immunity stated in 4(a)(i) and 4(b)(ii).

Berikan dua perbezaan antara jenis keimunan yang dinyatakan di 4(a)(i) dan 4(b)(ii).

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.....
[2 marks / markah]

4(b)(iii)

2

- (c) Diagram 4.2 shows a boy having fever due to viral infection.

Rajah 4.2 menunjukkan seorang budak lelaki yang mengalami demam disebabkan jangkitan virus.



Diagram 4.2
Rajah 4.2

Explain how fever helps in fighting against the pathogen.

Terangkan bagaimana demam membantu menentang patogen.

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[2 marks / markah]

4(c)

| | |
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| | 2 |
|--|---|

Total
A4

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|--|----|
| | 12 |
|--|----|

5 Diagram 5.1 shows the human vertebral column.

Rajah 5.1 menunjukkan turus vertebra manusia.

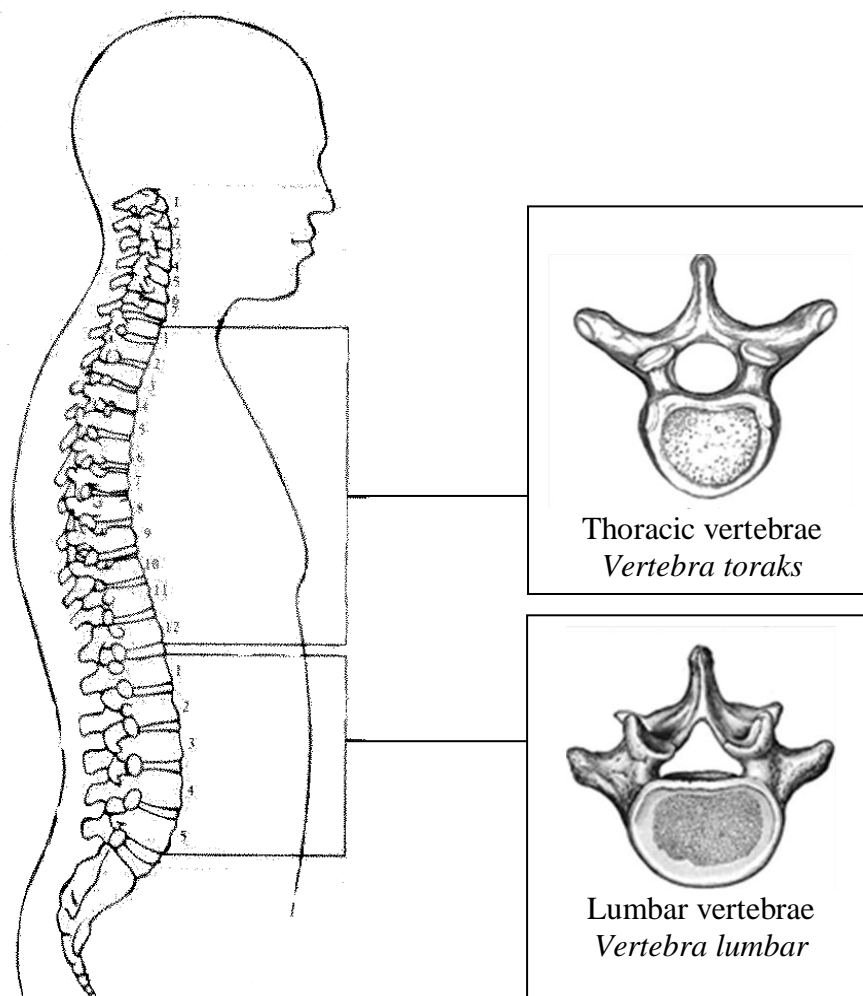


Diagram 5.1

Rajah 5.1

(a) (i) State the function of the vertebral column.

Nyatakan fungsi turus vertebra.

5(a)(i)

1

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.....

[1 mark / markah]

- (ii) Explain why the vertebral column is not straight.

Terangkan mengapa turus vertebra tidak lurus.

.....

.....

[2 marks / markah]

5(a)(ii)

2

- (b) State one specific characteristic of thoracic vertebrae and lumbar vertebrae:

Nyatakan satu ciri spesifik vertebra toraks dan vertebra lumbar.

Thoracic vertebrae:

Vertebra toraks:

.....

Lumbar vertebrae:

Vertebra lumbar:

.....

[2 marks / markah]

5(b)

2

- (c) (i) Intervertebral disc is located between the vertebrae. State the function of the intervertebral discs.

Cakera rawan terletak antara vertebra. Nyatakan fungsi cakera rawan.

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.....

[1 mark / markah]

5(c)(i)

1

- (ii) Slipped disc is a condition where the intervertebral discs of tissue between the bones in vertebral column pushes out. State one possible cause of slipped disc.

Kegelinciran cakera adalah satu keadaan di mana cakera rawan telah tergelincir dari posisi asalnya. Nyatakan satu kemungkinan penyebab kegelinciran cakera.

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[1 mark / markah]

5(c)(ii)

1

[Lihat halaman sebelah

- (c) (iii) Explain why slipped discs cause severe pain in the lower back.

Terangkan mengapa kegelinciran cakera menyebabkan kesakitan yang teruk di bahagian punggung.

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[2 marks / markah]

5(c)(iii)

2

- (d) Diagram 5.2 shows a woman with a bad posture while using a gadget.

Rajah 5.2 menunjukkan seorang wanita dengan postur yang tidak baik semasa menggunakan gajet.



Diagram 5.2

Rajah 5.2

State three effects of prolonged bad posture to the woman.

Nyatakan tiga kesan amalan postur tidak baik kepada wanita itu.

1:

2:

3:

[3 marks / markah]

5(d)

3

Total
A5

12