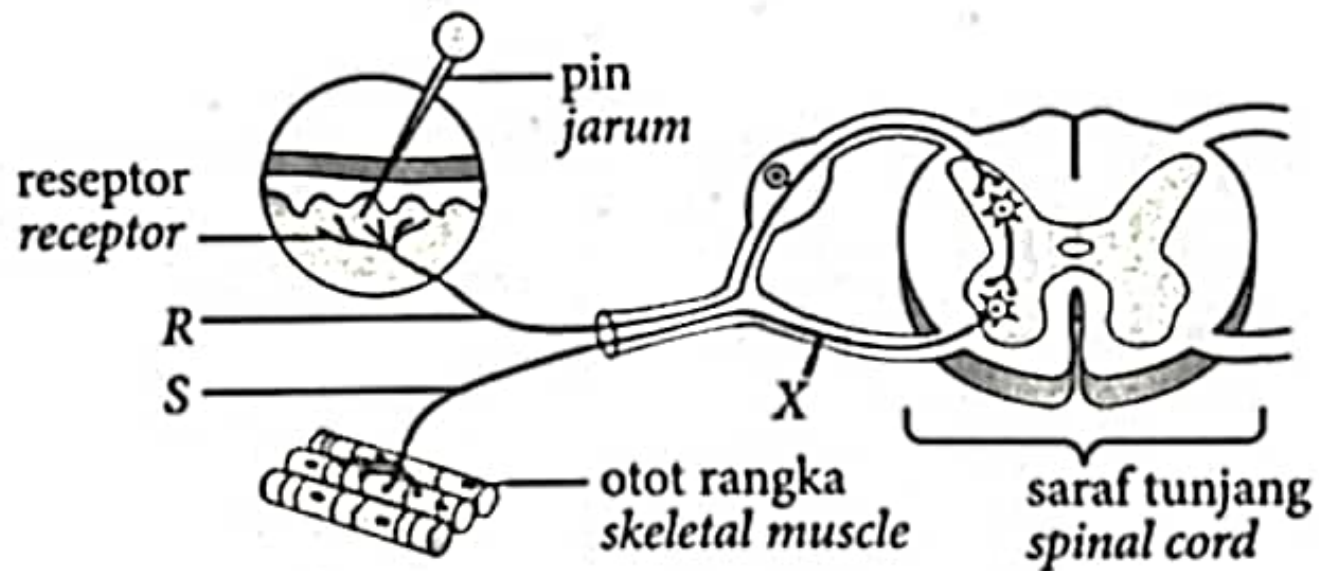


5. Rajah 5.1 menunjukkan arka refleks dalam manusia.

Diagram 5.1 shows a reflex arc in human.



Rajah 5.1 / Diagram 5.1

- (a) Nyatakan fungsi neuron R dan S.

State the function of neurones R and S.

R:

S:

[2 markah/marks]

- (b) Lukiskan arah pengaliran impuls saraf dalam Rajah 5.1.

Draw the direction of nerve impulses in Diagram 5.1.

[2 markah/marks]

- (c) Terangkan satu kepentingan tindakan refleks.

Explain one advantage of the reflex action.

.....

.....

.....

[2 markah/marks]

- (d) Seorang lelaki terbabit dalam satu kemalangan dan akar ventral pada X tercedera.

Terangkan bagaimana kecederaan ini mempengaruhi tindakannya apabila tidak sengaja tercucuk jarum tajam.

A man involved in an accident, his ventral root at X was injured.

Explain how the injury affects his action when he accidentally pricked by a sharp pin.

.....

.....

.....

[2 markah/marks]

Bahagian B

Section B

[20 markah/ 20marks]

Jawab **satu** soalan dalam bahagian ini.

*Answer **one** question in this section*

9. (a) Rajah 9.1 menunjukkan seorang doktor sedang melakukan ujian sentakan lutut kepada seorang pesakit.

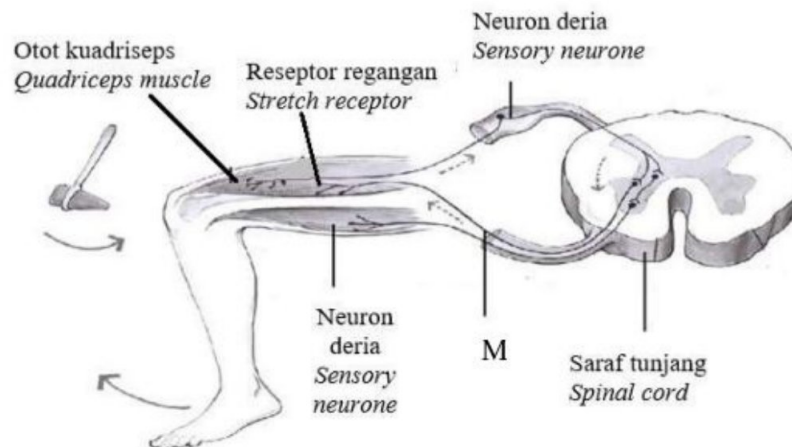
Rajah 9.2 menunjukkan laluan impuls saraf dalam ujian sentakan lutut.

Diagram 9.1 shows a doctor performing a knee jerk test to a patient.

Diagram 9.2 shows the pathway of nerve impulses in the knee jerk test.



Rajah 9.1 / Diagram 9.1



Rajah 9.2 / Diagram 9.2

Nyatakan kepentingan ujian sentakan lutut ini dilakukan dan terangkan bagaimana ujian ini dapat mengesan kerosakan pada saraf M.

State the importance of performing this knee jerk test and explain how this test can detect damage to the M nerve.

[7 markah/ 7 marks]

- (b) Rajah 9.3 menunjukkan satu situasi yang cemas.

Diagram 9.3 shows an emergency situation.



Rajah 9.3/ Diagram 9.3

Bandinkan dan bezakan dua sistem yang terlibat dalam situasi pada Rajah 9.3.

Compare and contrast two systems involved in the situation in Diagram 9.3.

[7 markah/ 7 marks]

SULIT

- (c) Jadual 9.4 menunjukkan keputusan ujian kepekatan glukosa dalam darah Encik Y. Jadual 9.5 menunjukkan keputusan ujian hormon perangsang tiroid (TSH) dan tiroksina dalam darah Encik Z.

Table 9.4 shows the results of the glucose concentration test in Mr. Y's blood.

Table 9.5 shows the test results of thyroid stimulating hormone (TSH) and thyroxine in Mr. Z's blood.

Ujian kepekatan glukosa dalam darah <i>Blood glucose concentration test</i>	
Nama: Encik Y Name: Mr Y	
Keputusan (mmol/l) <i>Result (mmol/l)</i>	Rujukan Julat normal (mmol/l) <i>Reference</i> <i>Normal range (mmol/l)</i>
17.8	7.8-11.1

Jadual 9.4 / Table 9.4

Ujian kepekatan hormon TSH dan tiroksina <i>Test for the concentration of TSH and thyroxine hormones</i>		
Nama: Encik Z Name: Mr Z		
Ujian hormon <i>Hormone test</i>	Keputusan <i>Result</i>	Rujukan Julat normal <i>Reference</i> <i>Normal range</i>
Perangsang tiroid TSH	0.1 mIU/L	0.4-4.5 mIU/L
Tiroksina <i>thyroxine</i>	5.2 ng/dL	0.9-2.3 ng/dL

Jadual 9.5 / Table 9.5

Berdasarkan Jadual 9.4 dan Jadual 9.5, terangkan penyakit yang dihadapi oleh Encik Y dan Encik Z.

Based on Table 9.4 and Table 9.5, explain the diseases suffered by Mr. Y and Mr. Z.

[6 markah/ 6 marks]

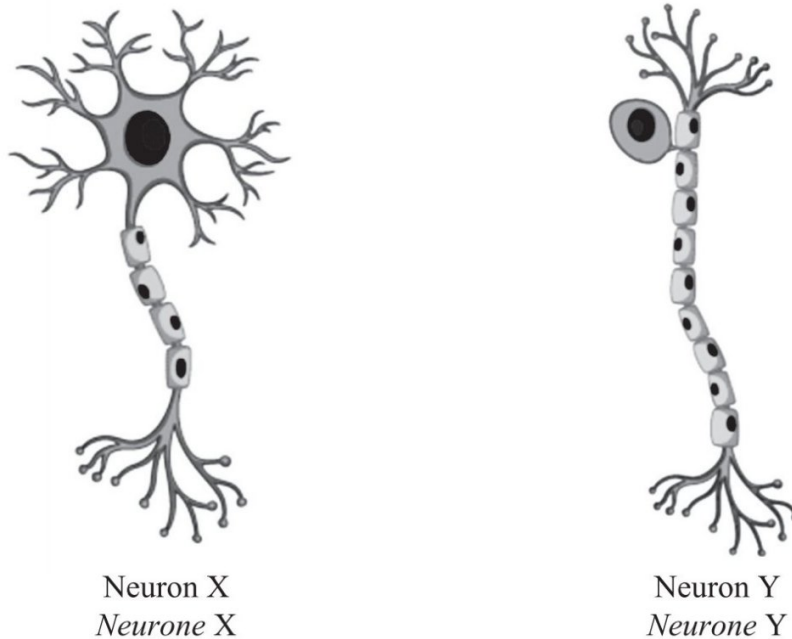
Bahagian B**Section B**

[20 markah]

[20 marks]

Jawab **satu** soalan daripada bahagian ini.*Answer **one** question from this section.*

- 9 Rajah 9.1 menunjukkan dua jenis neuron dalam sistem saraf.

Diagram 9.1 shows two types of neurone in nervous system.

Rajah 9.1
Diagram 9.1

- (a) (i) Namakan neuron X dan neuron Y.

Name neurone X and neurone Y.

[2 markah]

[2 marks]

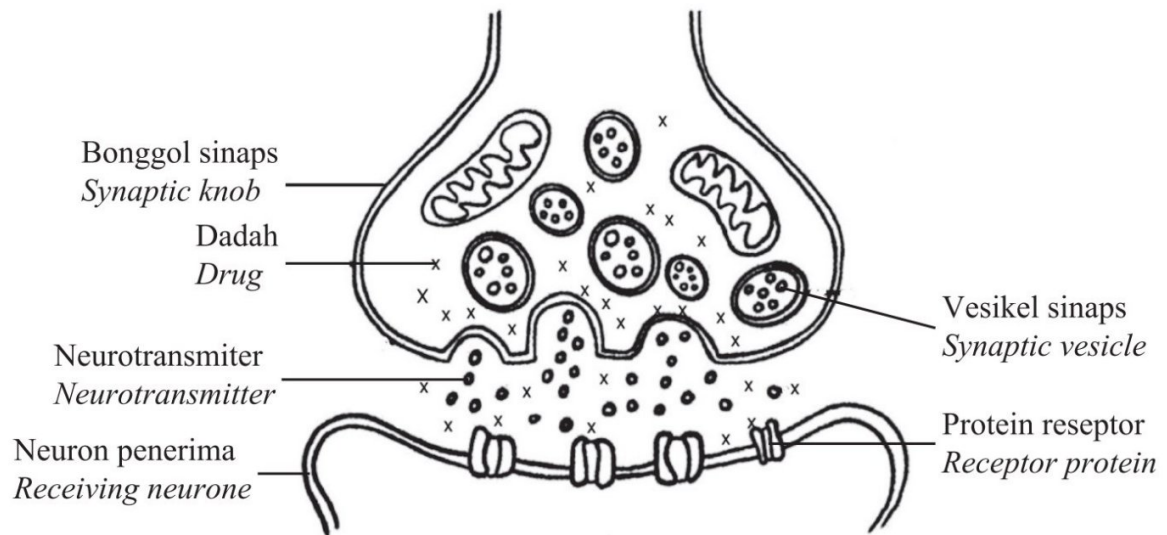
- (ii) Nyatakan peranan neuron X dan neuron Y dalam sistem saraf.

State the role of neurone X and neurone Y in nervous system.

[2 markah]

[2 marks]

- (b) Rajah 9.2 menunjukkan pemindahan neurotransmitter dan sejenis dadah merentasi sinaps. *Diagram 9.2 shows the transmission of neurotransmitter and a type of drug across the synapse.*



Rajah 9.2
Diagram 9.2

Seorang pesakit telah disuntik dengan sejenis dadah bagi mengurangkan rasa sakit.
Terangkan bagaimana dadah tersebut dapat mengurangkan kesakitannya.

*A patient was injected with a type of drug to reduce pain.
Explain how the drug can reduce the pain.*

[6 markah]
[6 marks]

- (c) Rajah 9.3 menunjukkan dua gerak balas yang berbeza oleh individu P dan Q.
Diagram 9.3 shows two different responses by individuals P and Q.

Individu P
Individual P



Gerak balas P
Response P

Individu Q
Individual Q



Gerak balas Q
Response Q

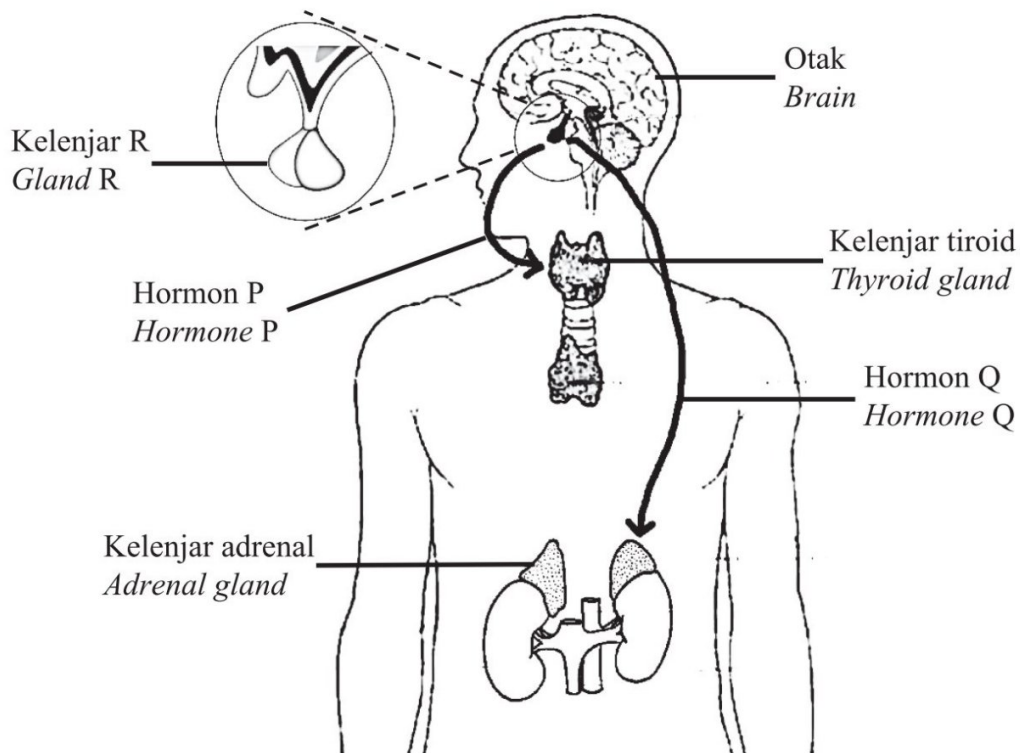
Rajah 9.3
Diagram 9.3

Bandingkan gerak balas P dan gerak balas Q.
Compare response P and response Q.

[10 markah]
 [10 marks]

10 Rajah 10.1 menunjukkan sistem endokrin manusia.

Diagram 10.1 shows the human endocrine system.



Rajah 10.1
Diagram 10.1

(a) (i) Namakan hormon P dan hormon Q yang dirembeskan oleh kelenjar R.

Name hormone P and hormone Q which are secreted by gland R.

[2 markah]

[2 marks]

(ii) Kelenjar R merupakan kelenjar utama dalam sistem endokrin.

Terangkan mengapa.

Gland R is the main gland in the endocrine system.

Explain why.

[2 markah]

[2 marks]

- (b) Rajah 10.2 menunjukkan dua orang budak sedang meluncur di gelanggang meluncur ais.
Diagram 10.2 shows two boys are skating on an ice-skating rink.



Rajah 10.2
Diagram 10.2

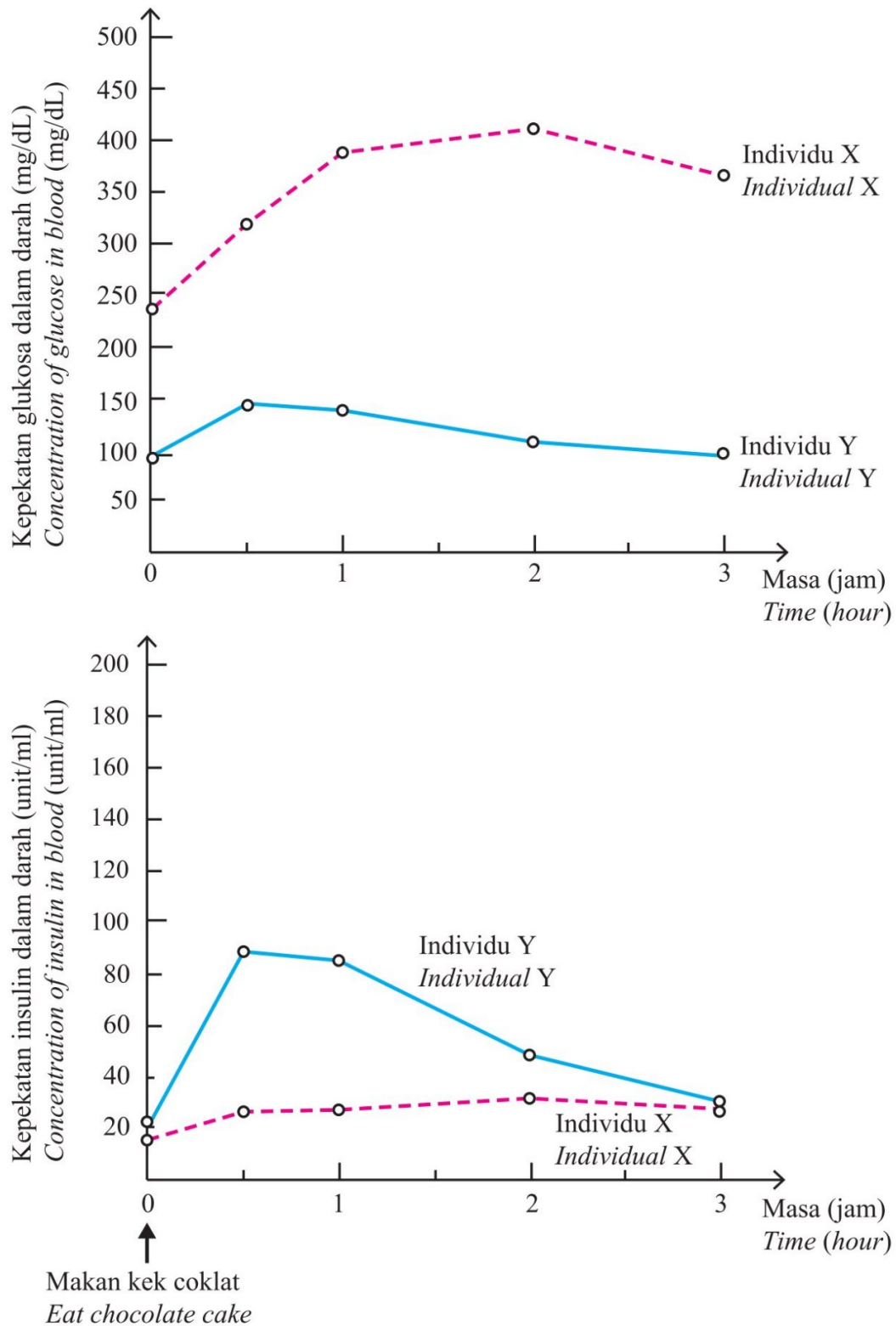
Terangkan bagaimana kelenjar endokrin terlibat dalam pengawalan suhu badan mereka.
Explain how the endocrine glands involve in regulating their body temperature.

[6 markah]

[6 marks]

- (c) Rajah 10.3 menunjukkan graf perubahan kepekatan glukosa dan kepekatan insulin dalam darah individu X dan Y dalam tempoh 3 jam selepas makan kek coklat.

Diagram 10.3 shows a graph of changes in glucose concentration and insulin concentration in the blood of individual X and Y within 3 hours after eating chocolate cake.



Rajah 10.3
Diagram 10.3

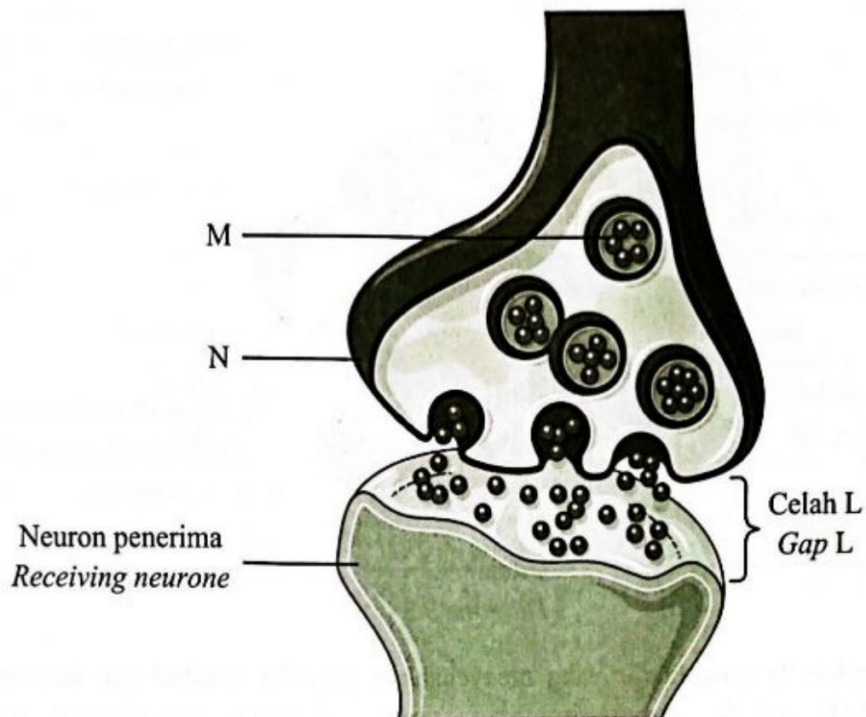
Berdasarkan Rajah 10.3,
Based on Diagram 10.3,

- terangkan perbezaan perubahan kepekatan glukosa dan kepekatan insulin dalam darah individu X dan Y dalam tempoh 3 jam.
explain the differences of change of glucose concentration and the insulin concentration in the blood between individual X and Y within 3 hours.
- terangkan bagaimana pengawalaturan kepekatan glukosa berlaku dalam individu Y.
explain how the regulation of glucose concentration occurs in individual Y.

[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.



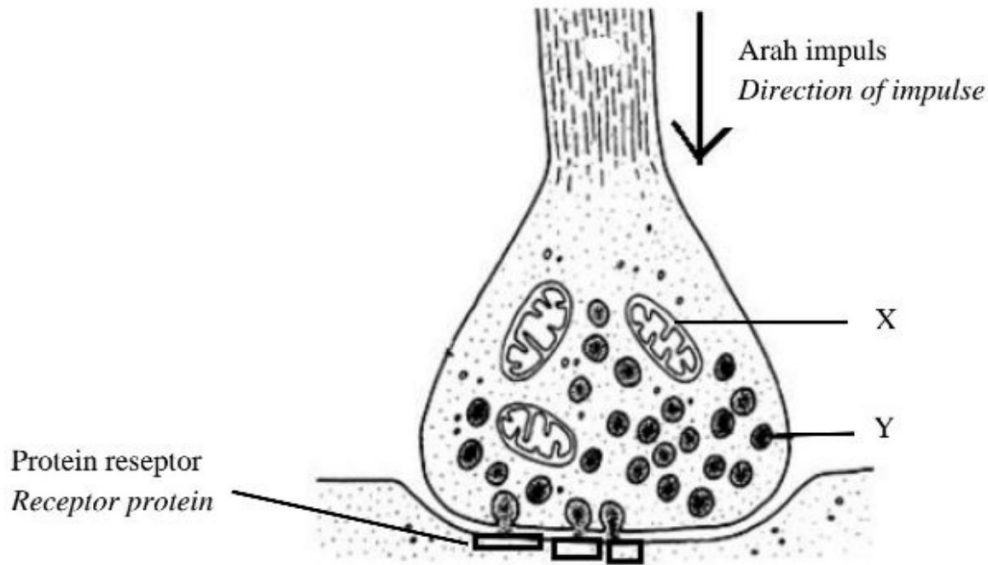
Rajah 10.3
 Diagram 10.3

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]

- 4 Rajah 4 menunjukkan keratan rentas bonggol sinaps.
Diagram 4 shows a cross section of a synaptic knob.



Rajah 4 / Diagram 4

- (a) Namakan struktur berlabel X dan Y.
Name the structures labeled X and Y.

X :

Y :

[2 markah / marks]

- (b) Mengapakah bonggol sinaps mengandungi banyak struktur X?
Why do synaptic knobs contain a lot of structure X?

.....

[1 markah / mark]

4(a)

2

4(b)

1

- (c) Terangkan mengapa penghantaran impuls saraf adalah dalam satu arah sahaja.
Explain why the transmission of nerve impulse is in one direction only.

.....

.....

.....

[3 markah/marks]

- (d) Barbiturat adalah ubat penenang yang digunakan di dalam bidang psikiatrik.
Nyatakan satu kesan barbiturat kepada penghantaran impuls melalui sinaps.
Barbiturates are sedatives, used in the field of psychiatry.
State one effect of barbiturate on the transmission of impulses through synapses.

.....

[1 markah / mark]

4(c)

	3
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4(d)

	1
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Total
A4

	7
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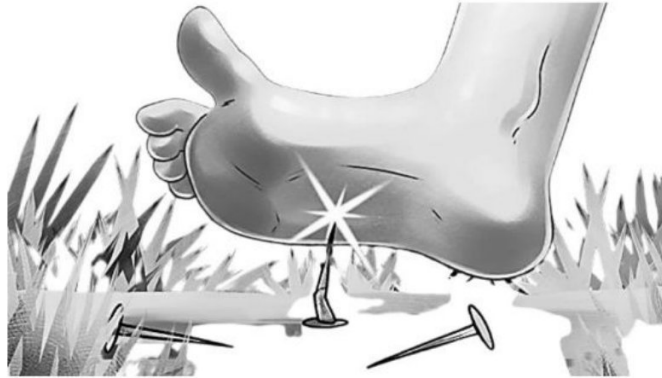
SECTION B
BAHAGIAN B

[20 markah / marks]

Answer **any** one questions from this section

Jawab mana-mana **satu** soalan daripada bahagian ini

- 9(a) Rajah 9.1 menunjukkan satu tindakan luar kawal.
Diagram 9.1 shows an involuntary action.



Rajah 9.1 / Diagram 9.1

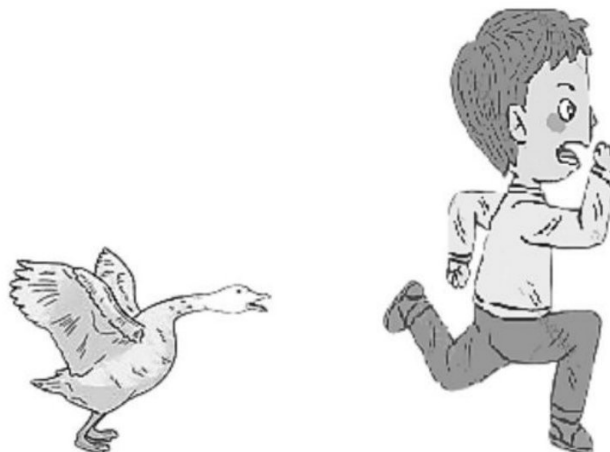
- (i) Nyatakan kepentingan gerak balas tersebut.
State the importance of the response.

[2 markah / marks]

- (ii) Huraikan pemindahan impuls untuk menghasilkan gerak balas dalam Rajah 9.1.
Describe the transmission of impulse to perform the response in Diagram 9.1.

[8 markah / marks]

- (b) Rajah 9.2 menunjukkan satu situasi yang dialami oleh seorang murid semasa dalam perjalanan pulang dari sekolah.
Diagram 9.2 shows a situation happened to a student during his way back from school.



Rajah 9.2 / Diagram 9.2

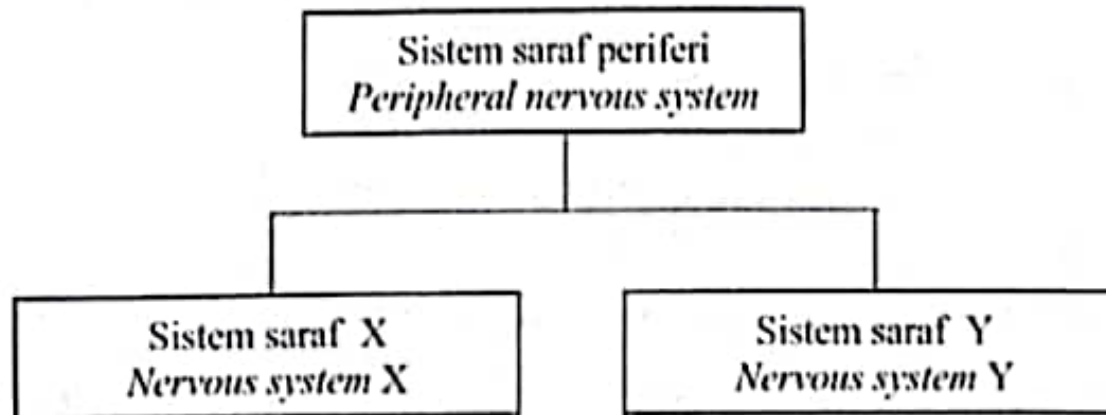
- (i) Huraikan tindakan hormon dalam situasi Rajah 9.2
Describe the action of hormone in the situation in Diagram 9.2

[4 markah / marks]

- (ii) Bandingkan sistem yang terlibat dalam Rajah 9.1 dan Rajah 9.2
Compare systems that involve in Diagram 9.1 and Diagram 9.2

[6 markah / marks]

- 10 (a) Rajah 10.1 menunjukkan dua jenis sistem saraf periferi.
Diagram 10.1 shows two types of peripheral nervous system.



Rajah 10.1 / Diagram 10.1

Terangkan fungsi sistem saraf X dan sistem saraf Y.
Explain the functions of nervous system X and Y.

[2 markah/marks]

- (b) Pemeriksaan perubatan menunjukkan seorang pesakit telah menghidap pankreatitis kronik. Doktor telah mencadangkan sebahagian pankreas pesakit tersebut perlu dibuang melalui pembedahan.
Terangkan kesan pembuangan sebahagian pankreas kepada aras gula dan kesihatan pesakit tersebut.

A medical check-up shows that a patient had chronic pancreatitis. The doctor suggested that certain part of the patient's pancreas should be surgically removed.

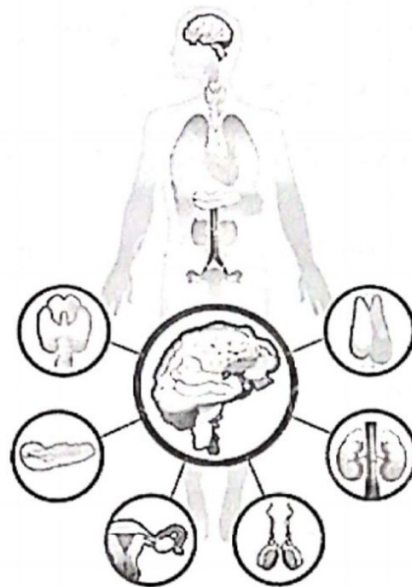
Explain the effect of removing certain part of the pancreas on the patient's sugar level and health.

[8 markah/marks]

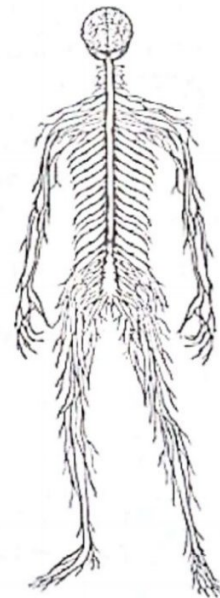
- (c) Rajah 10.2 (a) menunjukkan sistem P dalam manusia.
Rajah 10.2 (b) menunjukkan sistem Q dalam manusia.

Diagram 10.2 (a) shows system P in human.

Diagram 10.2 (b) shows system Q in human.



Rajah 10.2 (a)
Diagram 10.2 (a)

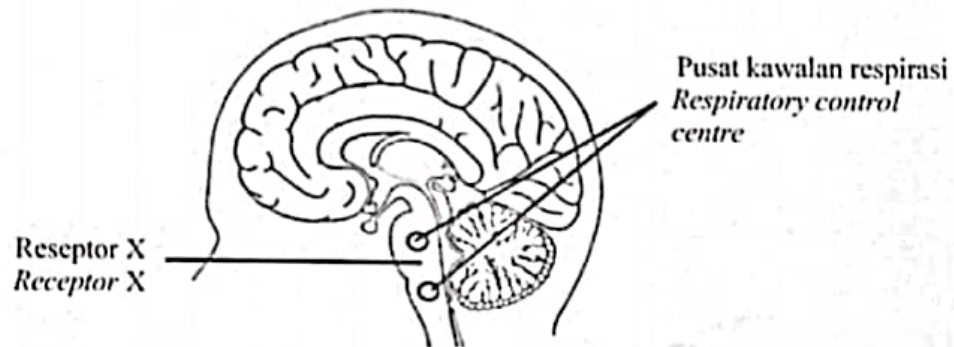


Rajah 10.2 (b)
Diagram 10.2 (b)

Bandingkan sistem P dan sistem Q.
Compare system P and Q.

[10 markah/ marks]

- 5 Rajah 5.1 menunjukkan organ yang terlibat dalam proses pengawalan tekanan separa gas karbon dioksida dalam darah bagi individu J.
Diagram 5.1 shows organ that is involved in a process of regulating the partial pressure of carbon dioxide in the blood of individual J.



Rajah 5.1/ Diagram 5.1

- (a) (i) Berdasarkan Rajah 5.1, namakan reseptor X.
Based on Diagram 5.1, name the receptor X.
-
- (ii) Nyatakan fungsi reseptor X yang dinamakan dalam (a)(i).
State the function of receptor X that named in (a)(i).
-
-
- (b) Labelkan medula oblongata pada Rajah 5.1.
Label medulla oblongata on Diagram 5.1.

[1 markah/mark]

[1 markah/mark]

[1 markah/mark]

5(a)(i)

1

5(a)(ii)

1

5(b)

1

- (c) Individu J sedang bertanding dalam Kejohanan Olahraga Sekolah. Terangkan peranan reseptor X dalam mengawal tekanan separa karbon dioksida dalam darah individu tersebut.

Individual J is competing in the School Athletics Tournament.

Explain the role of receptor X in regulating the partial pressure of carbon dioxide in the individual's blood.

.....

.....

.....

.....

[3 markah/marks]

5(c)

	3
--	---

- (d) Rajah 5.2 menunjukkan bacaan tekanan darah individu K.
Diagram 5.2 shows the blood pressure reading for individual K.



Rajah 5.2/ Diagram 5.2

Nyatakan persamaan homeostasis yang berlaku antara individu J dan individu K.
State the similarities of the homeostasis that occur between individual J and K.

.....

.....

.....

[2 markah/marks]

5(d)

	2
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Total

	8
--	---