

2 Which of the following are involuntary actions?
 Yang manakah antara berikut adalah tindakan luar kawal.

F
R

- I Riding a bicycle
- II Heart beat
- III Blinking eye
- IV Peristalsis

- A. I and II
- B. I and III
- C. II and IV
- D. III and IV

3 Which of the following is a characteristic of a reflex action?
 Yang manakah antara berikut adalah ciri tindakan reflex?

P
S

- A Response is controlled by hormones
Respon dikawal oleh hormon
- B Response is fast
Respon adalah cepat
- C Response is initiated under the control of the brain
Respon dicetuskan di bawah kawalan otak
- D Nerve impulse takes a longer path
Impuls saraf mengambil laluan lebih panjang

4 Diagram 1 shows the structure of a synaptic knob.

Rajah 1 menunjukkan struktur bonggol sinaps.

F
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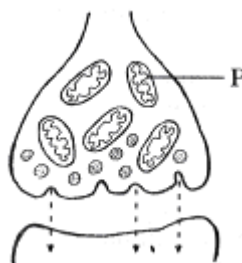


Diagram 1

What are the structure P and its function?

Apakah struktur P dan fungsinya?

	Structure and function
A	Mitochondrion - Generates energy to transmit impulses across synapse <i>Menghasilkan tenaga untuk pemindahan impuls merentasi sinaps</i>
B	Mitochondrion - Transfers impulses to cell body <i>Memindahkan impuls ke badan sel</i>
C	Vesicle - Secretes neurotransmitter <i>Merembeskan neurotransmitter</i>
D	Vesicle - Transfers impulses to synaptic knob <i>Memindahkan impuls ke bonggol sinaps</i>

5 What is the function of the axon of a sensory neuron?

F
S

Apakah fungsi akson neuron deria?

- A. To release neurotransmitter in the synaptic cleft.
Untuk membebaskan neurotransmitter di dalam celah sinaps
- B. To carry impulse away from the cell body
Untuk membawa impuls dari badan sel
- C. To speed up the conduction of impulse
Untuk mempercepat pengaliran impuls
- D. To carry impulse towards the cell body
Untuk membawa impuls ke arah badan sel

7

Diagram 2 shows an efferent neurone. Which of the structur labelled A,B,C or D transmit the impulse to the muscle cell?

F
R

Rajah 2 menunjukkan neuron eferen. Antara struktur berlabel A,B,C atau D yang mana menghantar impuls ke sel otot?

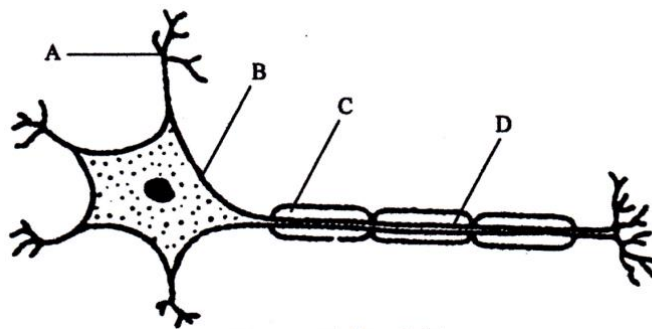


Diagram 2

8

A man consume a large quantity of alcohol in a long term. What type of disease can the man suffers from?

A
S

Seorang lelaki minum alkohol dalam kuantiti yang banyak untuk tempoh yang panjang. Apakah jenis penyakit yang akan dihidapinya?

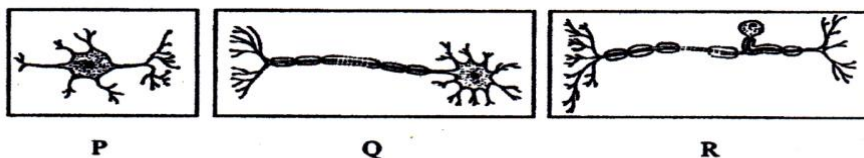
- A. Alzheimer
- B. Parkinson
- C. Liver cirrhosis
- D. Meningitis

9

Diagram 3 shows three types of nerve cells,P,Q and R.

F
R

Rajah 3 menunjukkan tiga jenis sel saraf P,Q dan R.



Which of the following is the correct sequence of impulses transfer?
Antara berikut yang manakah urutan pemindahan impuls yang betul?

- A P → Q → R
- B P → R → Q
- C R → P → Q

D R → Q → P

- 10 Diagram 4 shows the pathway of an impulse in a reflex arc.
Rajah 4 menunjukkan laluan impuls dalam arka reflex.

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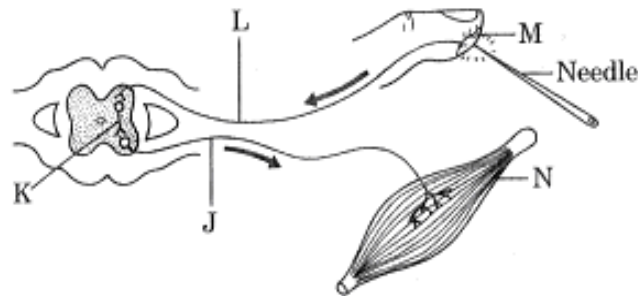


Diagram 4

Which statement is true in Figure 4?
Pernyataan manakah **benar** dalam rajah 4?

- A J receives an impulse direct from L and carries it to N
J menerima impuls terus dari L dan membawanya ke N
- B L transmits the impulse to M from the central nervous system
L memindahkan impuls ke M dari sistem saraf pusat
- C The rate of impulse transmission through K increases
Kadar pengaliran impuls melalui K meningkat
- D N causes the finger to react
N menyebabkan jari dapat bertindak
- 11 Diagram 5 shows a cross section of the spinal cord. Where is the cell body of the interneurone and efferent neurone located?
Rajah 5 menunjukkan keratan rentas saraf tunjang. Di manakah badan sel interneuron dan badan sel neuron eferen berada?

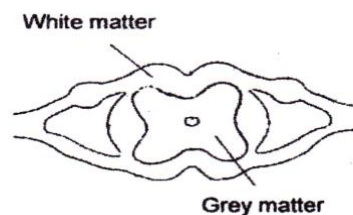


Diagram 5

- A dorsal root/akar dorsal
- B ventral root/akar ventral
- C white matter/jirim putih
- D grey matter/jirim kelabu
- 12 Diagram 6 shows how glucose changes to glycogen in the human body. Which of the

P
T

following represent hormones P and Q?

Rajah 6 menunjukkan bagaimana glukosa berubah ke glikogen dalam badan manusia. Yang manakah antara berikut mewakili hormon P dan Q?

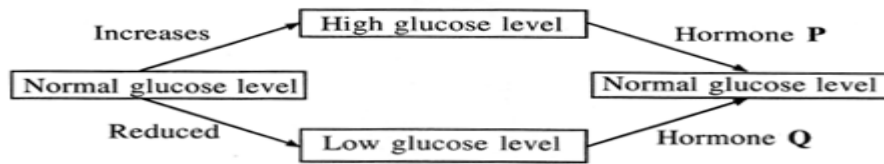


Diagram 6

- A P – insulin Q – glucagon
 B P – glucagon Q – insulin
 C P – adrenaline Q – insulin
 D P – thyroxine Q - adrenaline

15
P
R

Diagram 9 shows a synapse at the nerve ending.

Rajah 9 menunjukkan sinaps di hujung saraf.

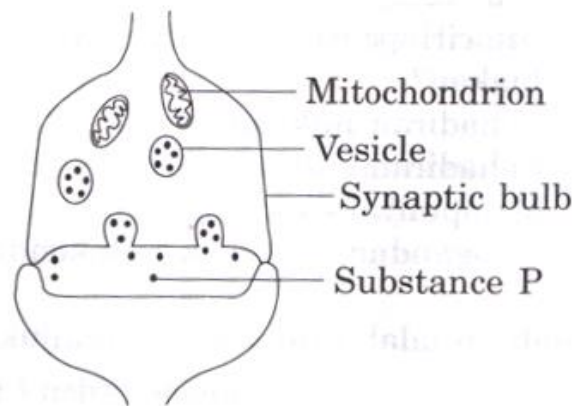


Diagram 9

What is substance P?

Apakah bahan P?

- A. Acetylcholine/Asetilkolin
 B. Oxytocin/Oksitosin
 C. Adrenaline/Adrenalina
 D. Prolactin/Prolaktin

16
A
R

Uncle Ali wants to sell bananas from his farm. To ensure that all the bananas ripen at the same time, he should spray the bananas with..

Pak cik Ali hendak menjual pisang dari kebunnya. Untuk memastikan semua pisang masak pada masa yang sama, dia sepatutnya menyembur pisang dengan..

- A. ethylene hormone/Hormon Etilena
 B. auxin hormone/Hormon Auksin
 C. gibberelin hormone/Hormon Giberelin
 D. cytokinin hormone/Hormon Sitokinin

- E.
 17 Diagram 10 shows the functions of hormones P and Q in regulating the glucose blood
 P Level.
 S *Rajah 10 menunjukkan fungsi hormone P dan Q dalam kawal atur aras glukos darah.*

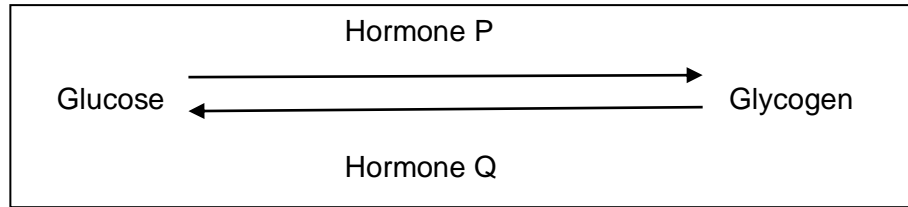


Diagram 10

What are hormone P and hormone Q?
Apakah hormon P dan hormon Q?

Hormone P	Hormone Q
A. Thyroxine	Insulin
B. Glucagon	Thyroxine
C. Insulin	Glucagon
D. Adrenaline	Aldosterone

- 18 Diagram 11 shows the human endocrine system.
 A *Rajah 11 menunjukkan sistem endokrin manusia.*
 R

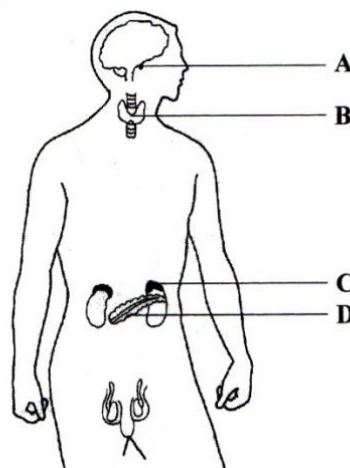


Diagram 11

Which of the glands A, B, C or D, is involved when an individual faces a moment of panic?
Antara kelenjar A, B, C dan D, yang manakah terlibat semasa seseorang individu menghadapi situasi yang cemas?

- 19 The diagram 12 shows parts of the human brain.
Rajah 12 menunjukkan bahagian otak manusia.
 F
 R

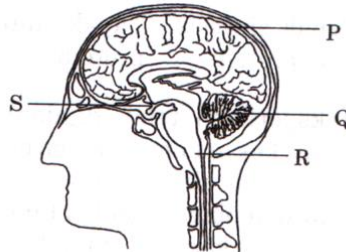


Diagram 12

Which of the following pairs of part of brain and its function is correct?
Yang manakah antara pasangan berikut adalah betul?

Part of brain/ <i>bahagian otak</i>		Function/ <i>fungsi</i>
A	P	Controls peristalsis movement <i>Mengawal pergerakan peristalsis</i>
B	Q	Controls balancing of movement <i>Mengawal keseimbangan pergerakan</i>
C	R	Controls thinking <i>Mengawal pemikiran</i>
D	S	Controls rate of heart beat <i>Mengawal kadar denyutan jantung</i>

- 20 Diagram 13 shows ultrafiltration in the Bowman's capsule. Which of the following substances enter into the capsular space?
Rajah 13 menunjukkan ultraturasan dalam kapsul Bowman. Manakah antara bahan berikut memasuki ke dalam kapsul Bowman?
 F
 S

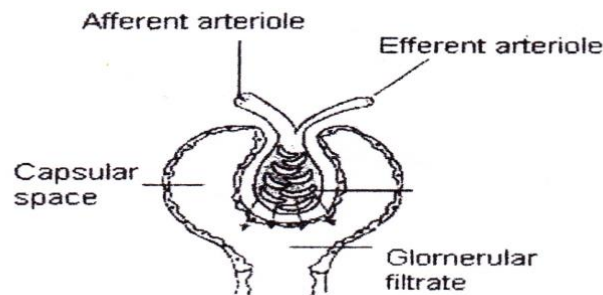


Diagram 13

- A water, glucose, amino acid, urea, mineral salt, red blood cell
Air, glukosa, asid amino, urea, garam mineral, sel darah merah
 B water, glucose, amino acid, urea, mineral salt
Air, glukosa, asid amino, urea, garam mineral

- C water, glucose, amino acid, urea, plasma protein
Air, glukosa, asid amino, urea, protein plasma
- D water, glucose, amino acid, glycerol, mineral salt
Air, glukosa, asid amino, gliserol, garam mineral

21 Diagram 14 shows the structure of a nephron.
Rajah 14 menunjukkan struktur nefron.

AN
T

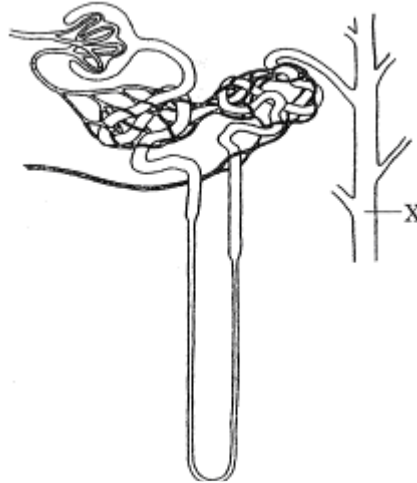


Diagram 14

Which of the following activities cause X to be more permeable to water?
Manakah antara berikut menyebabkan X menjadi lebih telap terhadap air.

- | |
|-------------------------------------------------------|
| P - Drinking a lot of water/ <i>Minum banyak air</i> |
| Q - Eating salty foods/ <i>Makan makanan bergaram</i> |
| R - Not exercising/ <i>Tidak melakukan senaman</i> |

- A P and R
 B P and S
 C Q and R
 D Q and S

23 What treatment should patient X receive to maintain a normal blood sugar level?
Apakah rawatan yang patut diterima oleh pesakit X untuk mengekalkan aras gula yang normal dalam darah?

A
T

- A. Take a balanced diet
Mengambil gizi seimbang
- B. Take glucose injections
Mengambil suntikan glukos
- C. Reduce the intake of carbohydrates
Mengurangkan pengambilan karbohidrat
- D. Take regular insulin and glucagon injections
Mengambil suntikan insulin dan glucagon secara teratur

24

A
T

A dog is chasing Siva at the street.

*Seekor anjing sedang mengejar Siva
di jalan raya*

Which of the following reaction occur in Siva's body?
Yang manakah berlaku dalam badan Siva?

- I metabolic rate increase
Kadar metabolisme meningkat
- II Rate of heartbeat increase
Kadar denyutan jantung meningkat
- III Body temperature increase
Suhu badan meningkat
- IV Blood glucose level increase
Aras glukosa darah meningkat

- A I and II
- B II and III
- C I,II and IV
- D I,II,III and IV

25 Student X was born normal but suffers from dwarfism since childhood. The suitable hormone to treat him is...

A
S

Pelajar X dilahirkan normal tetapi mengalami kekerdilan sejak kanak-kanak. Hormon paling sesuai untuk merawatnya ialah..

- A sex hormone /*Hormon seks*
- B gonadotropic hormone /*Hormon Gonadotrof*
- C growth hormone /*Hormon pertumbuhan*
- D adrenocorticotrophic hormone/*Hormon Adrenokortikof*

29

AP
T

A patient with kidney failure uses a haemodialysis machine to eliminate urea from his blood.

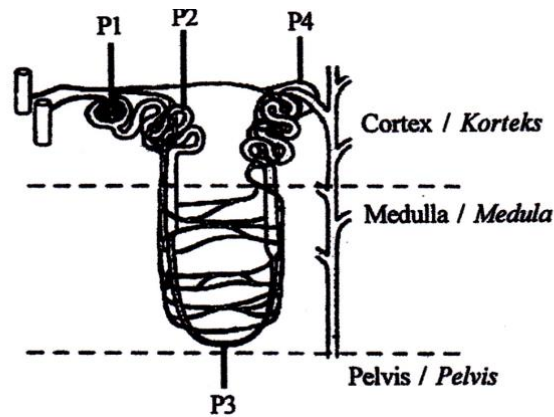
Seorang pesakit yang mengalami kegagalan ginjal menggunakan mesin haemodialisis untuk menyingkirkan urea dari darahnya.

Which of the following statements explain the situation?
Antara pernyataan berikut, yang manakah menerangkan situasi tersebut?

- A Concentration of urea in the dialysis fluid is higher than in the blood.
Kepekatan urea dalam cecair dialisis lebih tinggi daripada kepekatan urea dalam darah
- B Concentration of urea in the blood is higher than in the dialysis fluid
Kepekatan urea dalam darah lebih tinggi daripada kepekatan urea dalam cecair dialisis
- C Concentration of urea in the blood and in the dialysis fluid is the same.
Kepekatan urea dalam darah adalah sama dengan kepekatan urea dalam cecair dialisis.

D Concentration of water molecules in the blood is higher than in the dialysis fluid
Kepekatan molekul air dalam darah lebih tinggi daripada kepekatan molekul dalam cecair dialisis

30 Diagram shows a nephron. P1,P2,P3 and P4 are parts found on the nephron.K,L,M and N are processes that occur in the nephron.
 F *Rajah menunjukkan nefron. P1,P2,P3 dan P4 adalah bahagian yang terdapat pada nefron.*
 T *K,L,M dan N merupakan proses yang berlaku di dalam nefron.*



- K: The absorption of sodium chloride
Penyerapan sodium klorida
- L: Ultrafiltration
Ultraturasan
- M: The absorption of glucose
Penyerapan glukos
- N: Secretion of urea
Rembesan urea

Which process occur at P1,P2,P3 and P4?
Proses apakah berlaku di P1,P2,P3 dan P4?

	P1	P2	P3	P4
A	L	K	M	N
B	L	M	K	N
C	M	N	K	L
D	N	L	M	K

