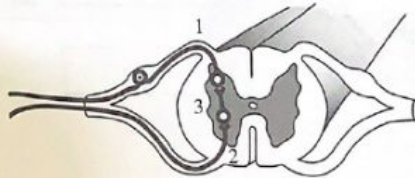


Objective Questions
Soalan Objektif

- 1 Diagram below shows a section of spinal cord.

Rajah di bawah menunjukkan keratan saraf tunjang.



Identify the neurones of the reflex arc as shown above.

Kenal pasti neuron dalam tindakan refleks yang ditunjukkan di atas.

	Motor neurone Neuron motor	Relay neurone Neuron pengganti	Sensory neurone Neuron deria
A	1	2	3
B	1	3	2
C	2	1	3
D	2	3	1

- 2 A finger that touches a hot object is quickly pulled away from the source of heat. What is the role of relay neurone in this response?

Jari yang tersentuh objek panas ditarik serta merta dari sumber haba. Apakah peranan neuron pengganti dalam gerak balas ini?

- A To pass nerve impulses out to the neurones
Untuk menghantar saraf impuls keluar ke neuron-neuron

- B To carry nerve impulses within the spinal cord
Untuk membawa saraf impuls dalam saraf tunjang
- C To link the sensory organs to the sensory neurone
Untuk menghubungkan organ deria kepada neuron deria
- D To generate impulses in the receptors of the finger
Untuk menjana impuls dalam reseptor pada jari

- 3 A man injures his arm in an accident. He can feel objects touching his hand, but he cannot move his hand away. What is the possible cause of this situation?

Seorang lelaki mengalami kecederaan tangan dalam suatu kemalangan. Dia dapat merasa objek yang menyentuh tangannya, namun tidak dapat menggerakkan tangannya. Apakah sebab yang mungkin bagi situasi ini?

- A Receptors in his hand are damaged
Reseptor dalam tangannya rosak
- B The nerve connection in the spinal cord is damaged
Sambungan saraf pada saraf tunjang telah rosak
- C The nerve connection is cut between the receptor in his hand and central nervous system
Sambungan saraf di antara reseptor tangan dan sistem saraf pusat terputus
- D The nerve connection is cut between his central nervous system and the effector in his arm
Sambungan saraf di antara sistem saraf pusat dan efektor di tangannya terputus

Structured Questions

Soalan Struktur

There are two types of coordinated responses—voluntary action and involuntary action.

Terdapat dua jenis gerak balas yang dikoordinasi iaitu tindakan terkawal dan tindakan luar kawal.

Voluntary action Tindakan terkawal	Involuntary action Tindakan luar kawal
➤ Controlled by conscious thought under the control of the _____. <i>Dikawal oleh pemikiran sedar dan mengikut _____.</i> ➤ Action is controlled by _____. <i>Tindakan dikawal oleh _____.</i> ➤ Involves the integration and _____ of information in the cerebrum. <i>Melibatkan integrasi dan _____ maklumat di serebrum</i> ➤ _____ response. <i>Gerak balas _____.</i> ➤ Examples are speaking and _____. <i>Contoh seperti bercakap dan _____.</i>	➤ Not controlled by the _____. <i>Tidak dikawal oleh _____.</i> ➤ Action is controlled by _____. <i>Tindakan dikawal oleh _____.</i> ➤ Involves _____ to detect the stimulus, medulla oblongata to _____ the information and _____ to carry out response. <i>Melibatkan _____ untuk mengesan rangsangan, medula oblongata _____ maklumat dan _____ menjalankan gerak balas</i> ➤ _____ response. <i>Tindak balas _____.</i> ➤ Examples are breathing and _____. <i>Contoh seperti bernafas dan _____.</i>

2. Answer the following questions.

Jawab soalan-soalan berikut.

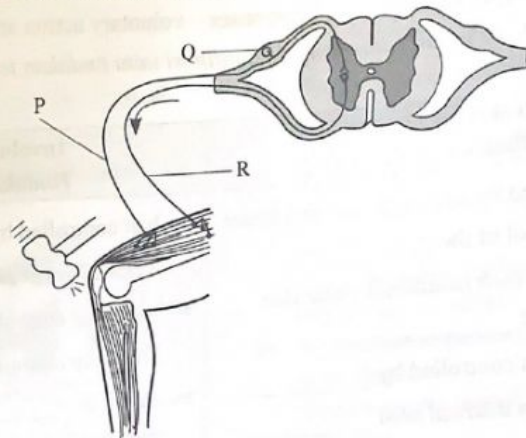
(a) Give a definition of reflex action.

Berikan definisi bagi tindakan refleks.

(b) Give two importance of reflex action to our body.

Berikan dua kepentingan tindakan refleks kepada badan kita.

- 3 Diagram below shows a reflex arc which involves only two neurones.
Rajah di bawah menunjukkan arka refleks yang melibatkan hanya dua neuron.



- (a) Name the two neurones involved.
Namakan dua neuron yang terlibat.
- (b) State the part where both neurones undergo synapse.
Nyatakan bahagian di mana kedua-dua neuron bersinaps.
- (c) Based on the diagram, explain how muscles respond when the knee tendon is tapped with a hammer.
Berdasarkan rajah, terangkan bagaimana otot bergerak balas apabila bahagian tendon lutut diketuk dengan penukul.
- (d) Explain what will happen when injuries occur in part R.
Jelaskan apa yang akan berlaku apabila berlaku kecederaan pada bahagian R.

Objective Questions
Soalan Objektif

- 1 Dopamine is a neurotransmitter. Which of the following diseases occurs when the neurons in the brain that produce dopamine die?

Dopamin ialah neurotransmitter.

Antara berikut, penyakit yang manakah berlaku apabila neuron dalam otak yang menghasilkan dopamin mati?

- A Alzheimer
Alzheimer
- B Multiple sclerosis
Sklerosis berganda
- C Parkinson's disease
Penyakit Parkinson
- D Amyotrophic lateral sclerosis
Amyotrophic lateral sklerosis

- 2 Which of the following is the possible effect of drugs on the coordination of human body?

Antara berikut, yang manakah kesan dadah yang mungkin bagi koordinasi badan manusia?

- A Increases blood flow
Meningkatkan aliran darah
- B Increases the contraction of skeletal muscle
Meningkatkan pengecutan otot rangka
- C Slows down the transmission of nerve impulse
Melambatkan pemindahan saraf impuls
- D Accelerates the activity of central nervous system
Meningkatkan aktiviti sistem saraf pusat

- 3 The information below is about a neurological disease.

Maklumat di bawah adalah berkaitan penyakit neurologi.

- Loss of memory
Hilang ingatan
- Shrinkage of brain tissues
Pengecutan tisu otak

What is the disease mentioned above?

Apakah penyakit yang dinyatakan di atas?

- A Alzheimer
Alzheimer
- B Multiple sclerosis
Sklerosis berganda
- C Parkinson's disease
Penyakit Parkinson
- D Amyotrophic lateral sclerosis
Amyotrophic lateral sklerosis

- 4 Which of the following drugs slows down the activity of central nervous system?

Antara berikut, dadah yang manakah memperlahankan aktiviti sistem saraf pusat?

- A Heroin
Heroin
- B Cocaine
Kokain
- C Nicotine
Nikotin
- D Amphetamine
Amfetamin

Structured Questions

Soalan Struktur

- 1 Fill in the blanks with the correct answer regarding diseases related to nervous system.
Isikan tempat kosong dengan jawapan yang betul mengenai penyakit-penyakit berkaitan sistem saraf.

(a) Multiple sclerosis

Sklerosis berganda

- This disease occurs due to the _____ of the nerve in the brain and the spinal cord.
Penyakit ini berlaku disebabkan _____ pada saraf di bahagian otak dan saraf tunjang.
- The body's immune system attacks the _____ sheath and causes disabilities to individuals such as fatigue, _____ vision, weakness in the _____ and numbness.
Sistem keimunan badan menyerang salut _____ dan menyebabkan individu terbahit hilang upaya seperti mengalami kelesuan, penglihatan _____, rasa lemah pada _____ dan kebas.

(b) Alzheimer

Alzheimer

- It is caused by the deterioration of neuron that controlled the _____ and thought for an individual.
Berlaku disebabkan oleh kemerosotan neuron yang mengawal _____ dan pemikiran seorang individu.
- This deterioration is due to _____ of acetylcholine secretion in the brain area, so the brain tissue will _____.
Kemerosotan ini disebabkan _____ rembesan asetilkolin di bahagian otak, maka tisu otak akan _____.

(c) Parkinson disease

Penyakit Parkinson

- Parkinson occurs due to the deterioration of nerves that controls the _____ and body _____.
Parkinson berlaku disebabkan kemerosotan pada saraf yang mengawal _____ dan _____ badan.
- Nerve deterioration is caused by the lack of _____ secretion in the brain.
Kemerosotan saraf adalah disebabkan oleh kekurangan rembesan _____ di dalam otak.

(d) Lou Gehrig/Amyotrophic Lateral Sclerosis (ALS)

- This disease occurs due to the deterioration _____ neurons responsible for controlling the movement of voluntary actions.

Penyakit ini berlaku disebabkan kemerosotan pada neuron _____ yang bertanggungjawab untuk mengawal pergerakan tindakan _____.

(e) Attention-Deficit Hyperactivity Disorder (ADHD)

- This disease causes the individual difficult to _____ and becomes over _____.

Penyakit ini menyebabkan individu susah memberi _____ dan menjadi terlampau _____.

(f) Autism

Autisme

- Autism is a nerve developmental disorder that can cause _____ to communicate, involve in social interactions and have to deal with behavioral _____.

Autisme adalah gangguan perkembangan saraf yang boleh menyebabkan _____ untuk berkomunikasi, menjalani interaksi sosial dan menghadapi _____ tingkah laku.

(g) Cerebral palsy

Lumpuh otak

- Cerebral palsy occurs due to nerve disorder caused by a brain _____ while the baby's brain is still _____.

Lumpuh otak berlaku disebabkan gangguan saraf disebabkan _____ otak yang berlaku semasa otak bayi masih _____.

- This disease affects the _____ of the body and muscle _____.

Penyakit ini menjejaskan _____ badan dan _____ otot.

(h) Epilepsy

Epilepsi

- A _____ disorder that occurs when the nerve cells in the brain produce _____ signals.

Gangguan _____ yang berlaku apabila sel-sel saraf dalam otak kadang-kala mengeluarkan isyarat yang _____.

- This affects feelings, behaviours and emotions or sometimes causing _____ spasm and _____.

Ia akan menjejaskan perasaan, tingkah laku dan emosi atau kadang-kala menyebabkan kejang _____ dan _____.