

سؤال 1

غير مجاب عليه بعد

الدرجة من 1.00

علم هذا السؤال

Chemical synapses use chemical messengers called \_\_\_\_\_ to transmit signals between neurons

a. Ion channels ☐

b. Receptors ☐

c. Neurotransmitters ☒

d. Hormones ☐

الصفحة التالية



الدرجة من 1.00

علم هذا السؤال

?Which division of the autonomic nervous system is responsible for the "fight or flight" response

Somatic nervous system .a ☐

Central nervous system .b ☐

Parasympathetic nervous system .c ☐

Sympathetic nervous system .d ☒

:During neuronal excitation, depolarization occurs when

- a ☐ The inside of the cell becomes more negative
- b ☒ The inside of the cell becomes more positive
- c ☐ The outside of the cell becomes more positive
- d ☐ The outside of the cell becomes more negative

The repolarization phase of an action potential involves the efflux of

- a. Chloride ions ☒
- b. Sodium ions ☐
- c. Calcium ions ☐
- d. Potassium ions ☐

:The threshold potential is the membrane potential at which

- a. ☐ Potassium channels close and sodium channels open
- b. ☒ Sodium channels open and an action potential is initiated
- c. ☐ Sodium channels close and potassium channels open
- d. ☐ The membrane is at its resting potential

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علم هذا السؤال

Which division of the motor system is responsible for involuntary movements and the regulation of internal organs?

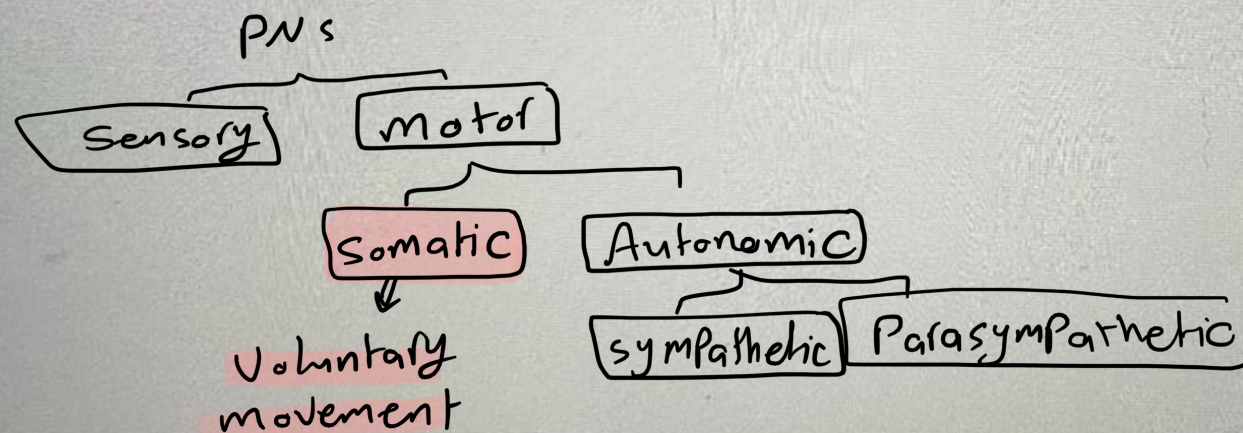
a. Sympathetic nervous system ☐

b. Somatic nervous system ☐

c. Autonomic nervous system ☒

d. Parasympathetic nervous system ☐

?Which part of the nervous system is responsible for controlling voluntary movements



Central system .a ☐

Autonomic system .b ☐

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Motor system .c ☐

Sensory system .d ☐

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علم هذا السؤال

:Spatial summation occurs when

- a. ☐ Multiple postsynaptic neurons release neurotransmitters onto a single presynaptic neuron
- b. ☒ Multiple presynaptic neurons release neurotransmitters onto a single postsynaptic neuron
- c. ☐ A single postsynaptic neuron releases neurotransmitters at multiple synapses simultaneously
- d. ☐ A single presynaptic neuron releases neurotransmitters at multiple synapses simultaneously

Presynaptic inhibition is achieved through the action of inhibitory neurotransmitters that bind to receptors on the

- a. ☐ Presynaptic neuron
- b. ☐ Postsynaptic neuron
- c. ☐ Synaptic cleft
- d. ☒ Axon terminal

At a chemical synapse, neurotransmitters are released from the \_\_\_\_\_ of the presynaptic neuron.

Axon terminal .a ☒

Myelin sheath .b ☐

Soma .c ☐

Dendrite .d ☐

During fatigue of synaptic transmission, the amount of neurotransmitter released from the presynaptic neuron:

- ☒ a. Decreases
- ☐ b. Remains unchanged
- ☐ c. Becomes more variable
- ☐ d. Increases

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علم هذا السؤال

The opening of ion channels in the postsynaptic neuron can result in the influx of \_\_\_\_\_ or the efflux of \_\_\_\_\_.

a. ☒ Sodium; potassium

b. ☐ Potassium; sodium

c. ☐ Calcium; chloride

d. ☐ Chloride; calcium

:Temporal summation refers to the process in which

Multiple postsynaptic neurons receive input from a single .a ☐  
presynaptic neuron

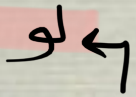
Multiple presynaptic neurons release neurotransmitters in .b ☐  
rapid succession onto a postsynaptic neuron

Multiple postsynaptic neurons release neurotransmitters .c ☐  
simultaneously

Multiple presynaptic neurons release neurotransmitters .d ☐  
simultaneously

None of the above .e ☐

single



بعض

دع

→ Increase neuronal activity by reducing threshold level

Theophylline, a compound found in tea, has a similar effect on synaptic transmission as caffeine and acts by

- .a ☐ Inhibiting the reuptake of neurotransmitters
- .b ☐ Reducing the binding of neurotransmitters to postsynaptic receptors
- .c ☐ Increasing the release of neurotransmitters
- .d ☐ Blocking postsynaptic receptors

:The effect of acidosis on synaptic transmission is typically

- a. ☒ Inhibited synaptic transmission
- b. ☐ Enhanced synaptic transmission
- c. ☐ No significant effect on synaptic transmission
- d. ☐ Variable depending on the neurotransmitter involved

:Synaptic delay refers to the

Time it takes for a postsynaptic neuron to respond to a .a ☐  
.presynaptic signal

Time it takes for a postsynaptic neuron to generate an action .b ☒  
.potential

Time it takes for a neurotransmitter to be released into the .c ☐  
.synaptic cleft

Time it takes for a presynaptic neuron to receive an incoming .d ☐  
.signal

The binding of neurotransmitters to receptors on the postsynaptic neuron  
\_\_\_\_\_ leads to the opening of

Neurotransmitter transporters .a ☐

Synaptic vesicles .b ☐

Ion channels .c ☐

Neurotransmitter reuptake pumps .d ☐

Fatigue of synaptic transmission refers to a decrease in synaptic efficacy  
:due to

- .a ☐ Inhibition of presynaptic neurons
- .b ☒ Depletion of neurotransmitter stores
- .c ☐ Increased release of neurotransmitters
- .d ☐ Prolonged activation of postsynaptic receptors

The process of presynaptic inhibition is commonly mediated by which type  
?of neurotransmitter

Dopamine .a ☐

Serotonin .b ☐

Glutamate .c ☐

GABA (gamma-aminobutyric acid) .d ☒

The speed of conduction of an action potential is increased in neurons that are

?

Small in diameter .a ☐

Myelinated .b ☒

Located in the central nervous system .c ☐

Unmyelinated .d ☐

The rapid depolarization phase of an action potential is primarily driven by the influx of

Potassium ions .a ☐

Sodium ions .b ☒

Calcium ions .c ☐

Chloride ions .d ☐

أختر اختياري

The refractory period following an action potential refers to a period of time during which

a. ☒ The neuron is unable to generate another action potential

b. ☐ The neuron is at rest

c. ☐ The neuron is depolarized

d. ☐ The neuron is hyperpolarized

أخل. اختياري

:The initial segment of a neuron is responsible for

- ☒ a. Integrating incoming signals
- ☐ b. Receiving sensory input
- ☐ c. Releasing neurotransmitters
- ☐ d. Transmitting action potentials

:Spatial summation occurs when

- a. ☒ Multiple presynaptic neurons release neurotransmitters onto a single postsynaptic neuron
- b. ☐ Multiple postsynaptic neurons release neurotransmitters onto a single presynaptic neuron
- c. ☐ A single presynaptic neuron releases neurotransmitters at multiple synapses simultaneously
- d. ☐ A single postsynaptic neuron releases neurotransmitters at multiple synapses simultaneously

أخلِ اختياري

The mechanism of synaptic transmission  
:ensures

- a. ☐ Simultaneous activation of all neurons
- b. ☒ Unidirectional flow of information
- c. ☐ Random release of neurotransmitters
- d. ☐ Inhibition of action potentials

أخل اختياري

:The effect of alkalosis on synaptic transmission is typically

*excitation.*

- .a ☒ **.Enhanced synaptic transmission**
- .b ☐ .No significant effect on synaptic transmission
- .c ☐ .Variable depending on the neurotransmitter involved
- .d ☐ .Inhibited synaptic transmission

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:Factors that can influence the duration of synaptic delay include

- 9
- .Axon diameter of the presynaptic neuron .a ☐
  - .Presence of inhibitory neurotransmitters .b ☐
  - .Voltage-gated ion channels in the postsynaptic neuron .c ☐
  - .Neurotransmitter concentration in the synaptic cleft .d ☒

Caffeine is known to enhance synaptic transmission by:

- a.  
Blocking postsynaptic receptors.
- b.  
Inhibiting the reuptake of neurotransmitters.
- c.  
Reducing the binding of neurotransmitters to postsynaptic receptors.
- d.  
Increasing the release of neurotransmitters.

Pesticides, such as organophosphates, can interfere with synaptic transmission by:

- a.  
Blocking postsynaptic receptors.
- b.  
Inhibiting the reuptake of neurotransmitters.
- c.  
Increasing the release of neurotransmitters.
- d.  
Inhibiting the activity of acetylcholinesterase.

:Pesticides, such as organophosphates, can interfere with synaptic transmission by

.Inhibiting the reuptake of neurotransmitters .a ☐

.Inhibiting the activity of acetylcholinesterase .b ☒

.Blocking postsynaptic receptors .c ☐

.Increasing the release of neurotransmitters .d ☐

?Which neurotransmitter is primarily associated with mood regulation, appetite, and sleep

Serotonin .a ☒

Glutamate .b ☐

Dopamine .c ☐

Norepinephrine .d ☐

Saltatory conduction refers to the propagation of action potentials along:

a.

Nodes of Ranvier in myelinated axons

المفروضه كويسه شاتر 6

b.

Unmyelinated axons



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c.

Dendrites

d.

Synaptic clefts

The initial segment of a neuron is responsible for:

- a.  
Transmitting action potentials
- b.  
Receiving sensory input
- c.  
**Integrating incoming signals**
- d.  
Releasing neurotransmitters

The binding of neurotransmitters to receptors on the postsynaptic neuron \_\_\_\_\_ leads to the opening of

- a ☐ Neurotransmitter transporters
- b ☐ Neurotransmitter reuptake pumps
- c ☐ Synaptic vesicles
- d ☒ Ion channels

:The somatic nervous system controls

Involuntary movements .a ☐

Voluntary movements .b ☒

Cardiac muscles .c ☐

Reflexes .d ☐

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During fatigue of synaptic transmission, the amount of neurotransmitter released from the presynaptic neuron

- a. ☒ Decreases
- b. ☐ Becomes more variable
- c. ☐ Increases
- d. ☐ Remains unchanged

:GABA (gamma-aminobutyric acid) is an inhibitory neurotransmitter that

- ☒ a. Reduces neuronal excitability
- ☐ b. Promotes feelings of pleasure and reward
- ☐ c. Enhances muscle contraction
- ☐ d. Regulates mood and sleep

The effect of acidosis on synaptic transmission

is typically

Inhibited synaptic transmission

Enhanced synaptic transmission b  
0

Variable depending on the c

neurotransmitter involved

No significant effect on synaptic d  
0 transmission

:Painkillers, such as opioids, exert their effects on synaptic transmission by

- .a ☐ Inhibiting the reuptake of neurotransmitters
- .b ☐ Increasing the release of neurotransmitters
- .c ☒ Activating opioid receptors in the central nervous system
- .d ☐ Blocking postsynaptic receptors

Glutamate is the primary excitatory neurotransmitter in the central nervous system,  
involved in

- a ☐ Inhibiting pain signals
- b ☐ Motor control and coordination
- c ☒ Memory and learning
- d ☐ Sleep regulation

أخل اختياري

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Which type of synapse promotes the generation of an action potential in the postsynaptic neuron?

a. ☐ Inhibitory synapse

b. ☐ Chemical synapse

c. ☒ Excitatory synapse

d. ☐ Electrical synapse