Brain and Behavior Module 3 Quiz

**Axons are specialized  \_\_\_\_\_, while dendrites are specialized  \_\_\_\_\_.**

to communicate :  for cell reproduction

for internal communication : for external communication

to receive neural signals : to send neural signals

to send neural signals : to receive neural signals

**\_\_\_\_\_\_ make the cell more positive \_\_\_\_\_\_ the likelihood it will fire.**

EPSPs : increasing

EPSP : decreasing

IPSPs : increasing

IPSPs : decreasing

**When a neuron fires \_\_\_\_\_\_\_\_.**

the cell dies

a new cell is born

an action potential is generated

neurotransmitters in the synaptic space are reabsorbed into the cell

**Agonists are substances which \_\_\_\_\_\_\_\_ neurotransmission, whereas antagonists \_\_\_\_\_\_\_\_\_  neurotransmission.**

Facilitate : inhibit

Inhibit : facilitate

Facilitate : have no effect on

Inhibit : have no effect on

**Which of the following statements about interneurons is FALSE?**

Their axons are typically myelinated

They transmit information over very short distances

They are the most common type of neuron in the nervous system

They are used for localized communication

**What happens when the action potential reaches the terminal button of the axon?**

The pre-synaptic neuron dies (its job is done)

The action potential reverses direction and travels back up the axon

The neurotransmitters in the synapse are “called back” into the terminal button

Neurotransmitters are released

**What important function do enzyme degradation and reuptake have?**

They remove neurotransmitters from the synaptic cleft

They feed and nourish the cell

They make neurotransmitters

They protect and serve neurotransmitters, keeping them safe and warm

**If you give an antagonist that affects an inhibitory neurotransmitter, the effect it will ultimately have on the post-synaptic neuron is:**

To further inhibit the post-synaptic neuron

To disinhibit the post-synaptic neuron

It depends on which neurotransmitter you are talking about

“I knew I shouldn’t have dozed off in class for this!”

**There is a limit to how rapidly a neuron can produce action potentials. This is due to \_\_\_\_\_\_\_\_\_\_**

inhibition

facilitation

the absolute refractory period

the relative refractory period

**When the action potential arrives at the terminal button, the entry of \_\_\_\_ ions stimulates the release of neurotransmitters.**

potassium

calcium

sodium

chloride

**Look at the diagram below and choose the option (a, b, c, or d) that correctly labels the letters on the diagram.**

Chart, line chart

Description automatically generated

a depolarization   c. sodium enters  e. potassium enters  g.  resting potential

a. resting potential  c. sodium enters  e. refractory period  g.  depolarization

a. resting potential  c. sodium enters  e. potassium exits     g. refractory period

a. chilling  c. excitation  e. coming down from a high  g.  in a slump

**An inhibitory neurotransmitter causes the inside of the postsynaptic neuron to become \_\_\_**

more positive

more depolarized

more negative  
neutral in charge

**What does the axon hillock do?**

Adds up all the positive and negative charges to determine whether the cell will fire

Releases neurotransmitters

Glues the axon to the cell body

Whatever it pleases

**When a myelinated cell fires, what happens under the myelinated sheath?**

Hey – what goes on under the sheath is none of our business!

Business as usual – all the action is at the Nodes of Ranvier

Sodium diffuses down the inside of the axon, bringing the membrane to threshold at the adjacent Node of Ranvier

Ions continue to move in and out of their channels, we just can’t see them

**Which of the following statements is FALSE? You will need to use your noggin for this one :)**

Rarely will a single message from one neuron be sufficient to fire a cell

Temporal summation can increase or decrease the probability that the cell will fire

Spatial summation can increase or decrease the probability that the cell will fire

None of the above statements are false

The first three statements are all false

**Why is it important for psychologists to understand how cells behave?**

I dunno

cells behave much like people do, so understanding cells ultimately leads to a better understanding of people

cellular activity is the basis of some behaviors

cellular activity is the basis of all behavior

**If an autoreceptor turns on, what effect will this have on neurotransmission?**

Nothing

It will facilitate neurotransmission

It will inhibit neurotransmission

It will have an unpredictable effect on neurotransmission

**Which of the following best describes salutatory conduction?**

The action potential jumps from one node to the next

A series of action potentials sweeps down the axon, one at each node

One action potential saluts the other, stimulating it into action

It’s all a game of Dominos

**What is a neurotransmitter "precursor"?**

a substance that "gobbles up" neurotransmitters in the synapse

a substance produced by glial cells and that interacts with neurons

a substance used to make the neurotransmitter

my answer is censored for foul language

**Which of the following best describes what is going on in people with multiple sclerosis?**

glial cells in their nervous systems multiply out of control - this interferes with neural transmission

neurons spontaneously die in their nervous system which then can affect behavior at multiple levels

myelin is damaged and this slows down neurotransmission

neurotransmitters start to diminish in amount and type

**How are chemical synapses different from electrical synapses?**

chemical synapses are found in the CNS while electrical synapses are found in the peripheral nervous system

chemical synapses slow and specific; electrical synapses are fast and nonspecific

chemical synapses use metabotropic receptors; electrical synapses use ionotropic receptors

chemical synapses are like text messages; electrical synapses are like emails

**Glial cell activity appears to be especially important for guiding and facilitating neural development \_\_\_\_**

in response to damage in the CNS

in elderly people

in teenagers

during fetal development

**What is responsible for building up the electrical potential in a neuron?**

anions

sodium and potassium

the cell membrane and the ions "dying" to move through it

Duracells

**Based on what was I talked about "in class", why is using psychotropic medications to treat people with a mental illness so challenging? Select all that apply.**

most are patented and therefore very expensive

most doctors are inadequately trained on their use

each person has their own unique levels of neurotransmitters

you cannot affect one neurotransmitter without affecting others

many behaviors are independent of neurotransmitter function