تجميع كويزات
الدكتور زهير
! ! !

Done by : Khalida Al Baddawi

Quiz 1

The resting potential of and skeletal muscles cells is most dependent on the transmembrane concentration gradient of which of the following ions :

a) Chloride
b) Potassium
c) Sodium
d) Calcium
e) Magnesium

The resting potential is dependent upon the electrochemical gradient for potassium ions because:

a) Cells contain largely potassium.
b) The permeability to sodium ions is very small except during action potentials.
c) The permeability of the resting membrane to potassium is higher than for other ions.
d) Of the activity of the sodium/potassium ATPase
e) Slow activation of voltage gated K channels

With regard to movement of ions and the Nernst equation:

a) Ions always move across a membrane up their concentration gradient.
b) The resting membrane potential of muscle cells will be positive by decreasing the extracellular concentration of Na ions
c) The membrane the resting membrane potential will become more negative hyperpolarized in hyperkalemia
d) Nernst potentials for Na ions is negative inside compared to the outside.
e) If the measured membrane potential equals the value calculated using the Nernst equation, then there will be no net movement of that ion.

If the solution bathing a cell contains 14 mM potassium and the intracellular concentration is 140 mM, what do you expect the Nernst potential to be?

-91mv
-81mv
-71 mv 2
-61 mv
-51 mv

Answers 1

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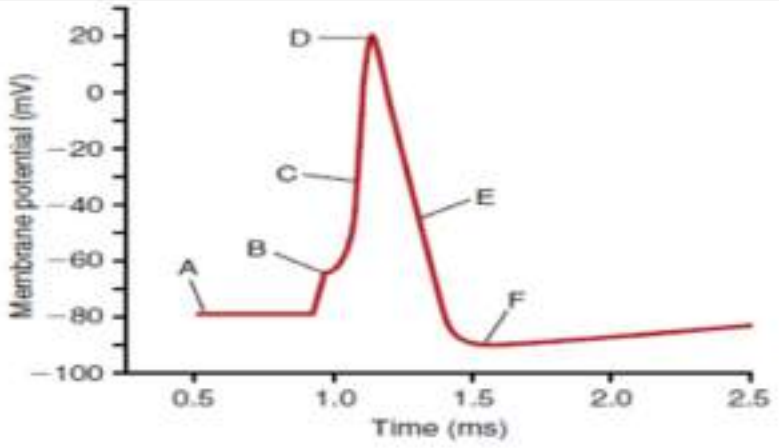
Quiz 2



The above diagram shows an action potential recoded intracellularly in an axon of a neuron.

Q1 **Which of the following is primarily responsible for the change in membrane potential between points B and D**

A) Inhibition of the Na+, K+-ATPase

B) Inward Movement of K+ into the cell

C) Movement of K+ out of the cell

D) Movement of Na+ into the cell

E) Movement of Na+ out of the cell

Q2 **The threshold for activation of voltage gated Na channels occurs at**

A) A

B)B

C) C

D) D

E) E

The axon of a neuron is stimulated experimentally with a 25-millivolt depolarizing stimulus , which initiates an action potential with a velocity of 70 meters per second. The axon is then stimulated with a 100-millivolt depolarizing stimulus after the refractory period was over. What is the action potential velocity after the 100-millivolt stimulation depolarizing stimulus (in meters per second)?

A) 25

B) 50

C 70

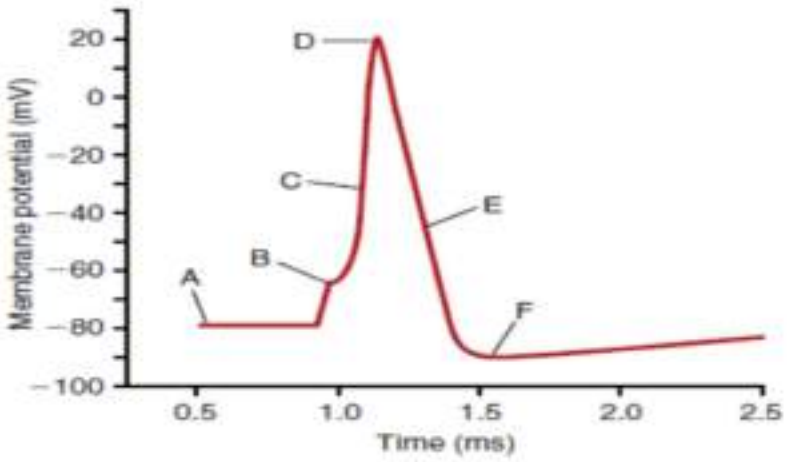
C) 100

D) 150

Q3 Which of the following are expected in patients diagnosed with multiple sclerosis

A. Increase frequency of action potentials in sensory neurons
B. Prolonged refractory period of action in motor neurons
C. Increased action potential propagation velocity
D. Impaired saltatory conduction of nerve impulse
E. Prolonged neuronal hyperpolarization

Answers 2



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Quiz 3

Q1 An increase in sodium conductance is associated with which of the following?

A. The plateau phase of the ventricular muscle action potential
B. The repolarization phase of the skeletal muscle action potential
C. The upstroke of the smooth muscle action potential
D. The refractory period of the nerve cell action potential
E. The depolarization of the pacemaker potential of Sino atrial node

Q2. Which phase of cardiac conduction distinguishes cardiac muscle cells from skeletal muscle cells?

A. Fast depolarization
B. Prolonged depolarization
C. Hyperpolarization
D. Rapid repolarization
E. Resting potential

Q3. Which of the following statements describes an absolutely refractory period in cardiac conduction?

A. Calcium channels are closed.
B. The cell has returned to resting potential.
C. T type calcium channels are open
D. A second action potential can't be initiated.
E. K channels are closed

Q4 . What specialized area of the heart functions as the pacemaker?

A. Bundle of His
B. AV node
C. SA node
D. Purkinge fiber
E. Ventricular fibers

Q5. In which phase of cardiac conduction do L type calcium channels open?

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E. Phase 3 of the action potential

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Quiz 5

Q1 Which of the following ions cause the presynaptic vesicles to fuse with the presynaptic membrane and release a neurotransmitter into the synaptic cleft ?
A. Calcium
B. Sodium
C. Potassium D. Chloride
E. Magnesium

Q2 An EPSP
a. Is an inhibitory hyperpolarisation
b. Is the transient postsynaptic depolarization due to neurotransmitter release
c. May be due to an excitatory neurotransmitter like glutamate.
d. May bring the membrane close to threshold for an action potential.
e. B, C, and D are correct.

Q3 Which of the following changes in electrical potential require voltage-sensitive channels?
A) excitatory synaptic potentials
B) mechanical sensory generator potentials
C) propagated action potentials
D) light sensory generator potentials
E) inhibitory synaptic potentials

Q4 Inhibitory postsynaptic potentials can arise from all of the following except
A) increased permeability of the nerve membrane to Cl− ion.
B) direct application of GABA to neurons.
C) increased permeability of the nerve membrane to K+ ion.
D) increased permeability of the cell membrane to Na+ ion.

Q5 Which of the following amino acids is an excitatory neurotransmitter in the central nervous system
A. Glutamic acid
B. GABA
C. Glycine
D. Tryptophan
E. Alanine

An Excitatory postsynaptic potential (EPSP)
A. Depolarizes the postsynaptic membrane by opening Na+ channels
B. Depolarizes the postsynaptic membrane by opening K+ channels
C. Hyperpolarizes the postsynaptic membrane by opening Ca2+ channels
D. Hyperpolarizes the postsynaptic membrane by opening Cl− channels
E. Requires activation of voltage gated Na channels

Which of the following is characteristic of synaptic potentials?
A. Temporal summation
B. All or none event
C. Spontaneous depolarization
D. Fast self-propagated potentials
E. Are always excitatory.

Presynaptic inhibition is a phenomenon which is mediated by which of the following types of synapses
A. axoaxonic
B. Axosomatic
C. Axodendritic
D. Electrical
E. Gap junctions

Answer 5

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بالتوفيق

#النادي_الطبي

#معكم_خطوة_بخطوة