Chapter 9 Questions

"Synapses en passant" refers to the fact that postganglionic autonomic neurons release

neurotransmitter ----->along the length of the axon.

** All of the following molecules are considered "nonadrenergic noncholinergic" neurotransmitters produced by postganglionic autonomic axons except _____.

All of the following molecules are considered "nonadrenergic noncholinergic" neurotransmitters produced by postganglionic autonomic axons except _____. ----->acetylcholine

** Catecholamines are derived from _____. ----->tyrosine

** Drugs that help asthmatics breathe better by opening or dilating bronchioles would be classified as _____. ----->beta 2 agonists

** If cocaine blocks the reuptake of catecholamines, it would be considered a _____. ----->sympathetic agonist

** In general, parasympathetic activation will produce effects that are _____ to those produced by activation of sympathetic neurons. ----->antagonistic

** Stimulation of which of the following would cause an increase in heart rate and contraction strength?

Stimulation of which of the following would cause an increase in heart rate and contraction strength? ----->beta 1 receptors

** The "fight or flight" response is the term used to describe activation of the _____. ----->sympathetic division

** The brain area that most directly controls the activity of the autonomic nervous system is the _____. ----->medulla oblongata

** The effects of sympathetic and parasympathetic innervation on the urinary and reproductive systems, causing the male erection and ejaculation for example, are called _____. ----->cooperative

** The effects of sympathetic and parasympathetic stimulation of the salivary glands are called _____. ----->complementary

** The separate effects of sympathetic and parasympathetic innervation of the pacemaker region of the heart can best be described as _____. ----->antagonistic

** The very long cranial nerve that originates from the nuclei in the medulla oblongata and projects preganglionic fibers through the neck to the thoracic and abdominal cavities, is the _____ nerve. ----->vagus (X)

** Which of the following cranial nerves does not contain preganglionic parasympathetic fibers? ----->optic (II)

** Which of the following ganglia is not a collateral ganglion? ----->cervical

** Which of the following releases a catecholamine as a neurotransmitter? ----->postganglionic sympathetic fibers

** Which of the following statements about parasympathetic neurons is true? ----->They synapse in terminal ganglia, either next to or within the organs innervated.

** Which of the following statements does not describe denervation hypersensitivity? ----->Autonomic target tissues become more sensitive than normal to stimulating agents.

** Which of the following target tissues does not receive dual innervation? ----->most blood vessels

** Which of the following target tissues is innervated by only neurons from the sympathetic nervous system? ----->adrenal medulla

**Epinephrine released from the adrenal medulla may stimulate target receptors for a longer period of time than norepinephrine released from neurons. Why may this be? ----->There are no enzymes in the bloodstream to deactivate epinephrine and norepinephrine.

**One important difference between autonomic neurons and somatic neurons is the presence of _____. ----->varicosities

**Somatic motor neurons have cell bodies located _____ the CNS that project axons only to _____, and are usually under _____ control. ----->inside; skeletal muscle; voluntary

**Stimulation of which of the following receptors would most likely decrease glandular secretions within the GI tract? ----->muscarinic (M3,M4)

**Targets of the autonomic nervous system include all of the following except _____. ----->skeletal muscle

**The drug muscarine, derived from some poisonous mushrooms, stimulates all of the following cholinergic receptors except those receptors in _____. ----->the neuromuscular junction of skeletal muscle fibers

**When a preganglionic neuron innervates several postganglionic neurons, it is called _____. ----->divergence

**When the parasympathetic division is stimulated, what neurotransmitter is released at the effector organ? ----->acetylcholine

**Which of the following is innervated by postganlionic fibers arising from the cervical ganglia? ----->the eyes

---

**Which statement regarding autonomic parasympathetic neurons is true? ----->They emerge from the brain and sacral regions.

_____ selectively stimulates a2 receptors in brain neurons thereby suppressing sympathoadrenal activation and lowering blood pressure. ----->Clonidine

_____ fibers have relatively slower nerve conduction because they are thin and unmyelinated. ----->Postganglionic autonomic sympathetic

_____ ganglia are associated with the parasympathetic division of the autonomic nervous system. ----->Terminal

_____ is a muscarinic antagonist derived from the nightshade plant. ----->Atropine

_____ is released by most postganglionic sympathetic nerves. ----->Norepinephrine

A defect in nitric oxide synthetase gene may result in reduced _____ of cerebral arteries since nitric oxide production would be impaired. ----->vasodilation

All adrenergic receptors act via ----->G-proteins.

Alpha-1-adrenergic receptors are mediated by ----->Ca2+.

Alpha2-adrenergic receptors on presynaptic axon terminals, when stimulated, cause ----->decreased release of norepinephrine.

Atropine would ----->block constriction of the pupil.

Autonomic motor nerves do NOT innervate ----->skeletal muscle.

Blocking β2-adrenergic receptors prevents airway ----->dilation.

Blood flow to skeletal muscle would be _____ in response to muscarinic antagonists ----->decreased

Bradykinin stimulates ----->surface blood vessel dilation.