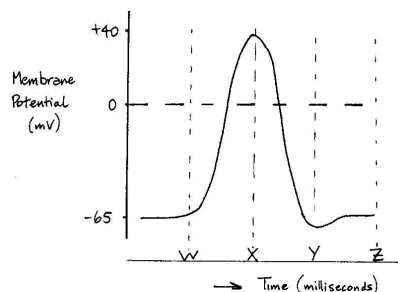


28. Which event occurs first at the **LEADING** edge of an impulse?
- K^{1+} enters the neuron.
 - K^{1+} leaves the neuron.
 - Na^{1+} enters the neuron.
 - Na^{1+} leaves the neuron.

29. Which of the following occurs during resting potential?
- Ca^{2+} is secreted.
 - Na^{1+} is pumped out of axons.
 - Axons recover neurotransmitters.
 - Postsynaptic membranes get depolarized.

Use this graph for the next two questions.



30. What occurs between time X and Y?
- Repolarization.
 - Depolarization.
 - Resting potential.
 - Refractory period.
31. When does Na^{+1} diffuse into the neuron?
- Between W and X.
 - Between X and Y.
 - Between Y and Z.
 - Before W and after Z.

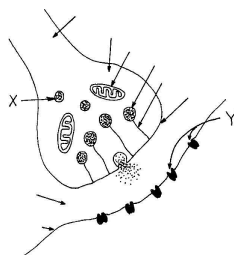
32. The phenomenon that all impulses have the same "strength" is known as
- action potential.
 - semi-conservative.
 - refractory response.
 - all-or-none response.

33. Na^{1+} moves to the outside of an axon by
- diffusion.
 - exocytosis
 - active transport.
 - facilitated transport.

34. Which is **NOT** required for impulse transmission between neurons?
- Enzymes.
 - Neurotransmitters.
 - Synaptic membranes.
 - The presence of Ca^{2+} .

35. Mitochondria in the synaptic end of an axon provide energy for
- the exocytosis of neurotransmitters.
 - pumping Na^{1+} across the synapse.
 - pumping K^{1+} across the synapse.
 - synthesizing receptor sites on the post-synaptic membrane.

Use this sketch for the next 2 questions.



36. Structure X functions to transport
- neurotransmitters to an axon.
 - Na^{1+} and K^{1+} to the receptors.
 - ATP away from the mitochondria.
 - neurotransmitters to the presynaptic membrane.

37. What do structures Y represent?
- Na/K pumps on an axon.
 - Attachment sites for Ca^{2+} on a dendrite.
 - Receptor sites on a postsynaptic membrane.
 - Production sites of enzymes that destroy neurotransmitters.

38. Neurotransmitters enter synaptic gaps by
- diffusion.
 - exocytosis.
 - active transport.
 - facilitated transport.

39. The ANS controls
- voluntary smooth muscles.
 - voluntary skeletal muscles.
 - involuntary smooth muscles.
 - involuntary skeletal muscles.

40. Sympathetic motor axons release
- adrenaline.
 - acetylcholine.
 - noradrenaline.
 - acetylcholinesterase.

41. Parasympathetic stimulation increases
- heart rate.
 - breathing rate.
 - smooth muscle activity.
 - blood flow to skeletal muscles.

42. Which combination of neurotransmitter and neuron increases action in the ileum?

neurotransmitter	neuron
A. acetylcholine	sympathetic
B. noradrenaline	sympathetic
C. acetylcholine	parasympathetic
D. noradrenaline	parasympathetic

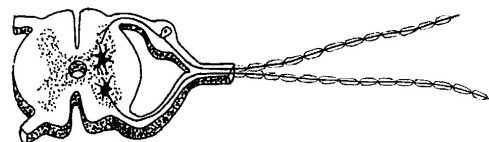
43. Fluid taken from near a rapidly beating heart and applied to a stomach would **MOST** likely cause the stomach to
- speed up.
 - slow down.
 - secrete gastric juice.
 - increase its oxygen uptake.

44. The ANS includes the
- brain and spinal cord.
 - somatic nervous system.
 - cerebellum and medulla oblongata.
 - sympathetic and parasympathetic neurons.

45. Adrenaline is produced by the
- pancreas.
 - adrenal cortex.
 - adrenal medulla.
 - medulla oblongata.

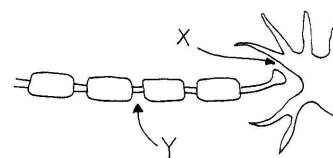
WRITTEN ANSWERS:

This sketch refers the first question.



- Copy the above sketch and use it to
 - LABEL** the sensory and motor neuron.
 - LABEL** the axon and dendrite of the cells identified in Part a.
 - DRAW** arrows to indicate the direction of impulse transmission in this diagram.
- From which specific regions of the CNS do the various autonomic nerve fibres originate?

This sketch refers to the next question.



- Nerve impulse transmission is different in area "X" compared to area "Y".
 - Describe what occurs at X when an impulse is being conducted there.
 - Describe what occurs at Y when an impulse is being conducted there.
- Explain the neuroendocrine control function of the brain.
 - Describe the body's response to increased stimulation by the sympathetic nervous system.
 - How does this prepare the body to respond to emergency situations?