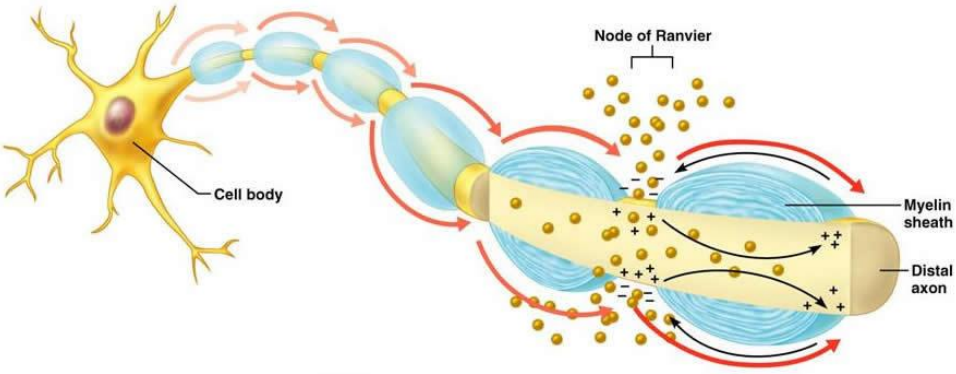
Homeostasis Unit Review Sample Answers

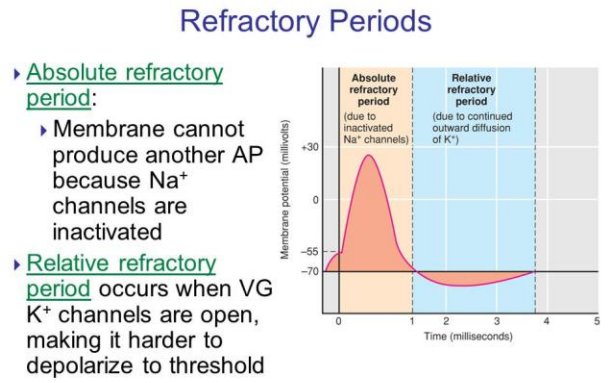
Nervous System: P. 559 #1-20 **Answer in back of textbook**

P. 561 #25-26 Answer back of textbook

28 Answer back of textbook

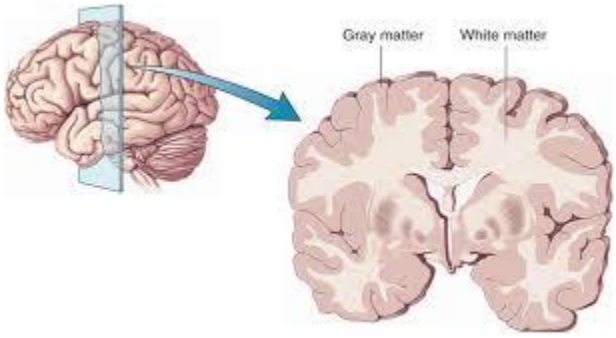


30 Nodes of Ranvier are unmylenated sections along the axon. They allow fo salutatory conduction (jumping of action potential from node to node) which speeds up conduction/transmission of action potential.

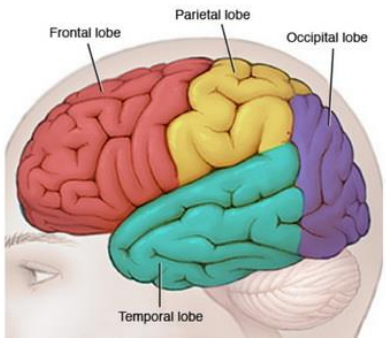


32 Refractory periods ensure that action potentials only travel in one direction. It also allows the neuron to adjust and limit the number of action potentials that can be sent

35 white matter is myelinated and can regenerate due to the presence of neurilemmal, grey matter are unmyelinated neurons and cannot regenerate



36 temporal, frontal, occipital, parietal



37 to protect the brain from large particles and foreign materials from entering because the brain cannot swell as a protective mechanism due to being surrounded by the skull

48 a) chemical, neurotransmitters are shown

b) C

c) A

d) neurotransmitters are being released, exocytosis

e) sodium channels open and excitation occurs

55 less likely to reach threshold because less Na+ moving into the axon, therefore fewer/no action potentials sent

57 a) A- Na+ channels opening, E – K+ channels closing

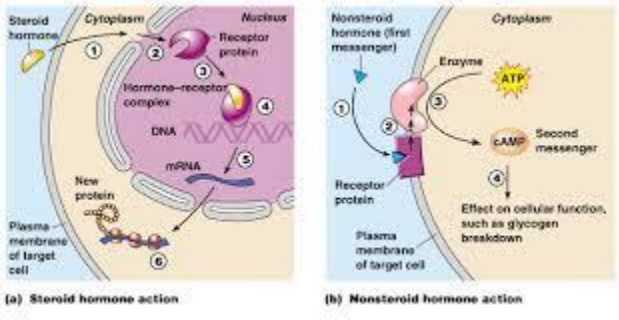
b) A

Endocrine System: P. 507 #1-9 **Answer in back of textbook**

P. 509

#27 Answer back of textbook

30 Protein hormones bind to receptors on the cell surface since they are water soluble (hydrophilic molecules) Steroid hormones enter the cell and nucleus and bind with receptor protein in the nucleus since they are hydrophobic molecules and can pass through membranes.



31 a) Thyroid required iodine to function since it makes T3 & T4 which require iodine to be made

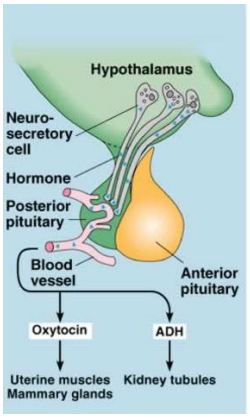
b) If there is not enough iodine a goiter may develop due to over activity of the thyroid and less T3 & T4 will be produced which could lead to hypothyroidism.

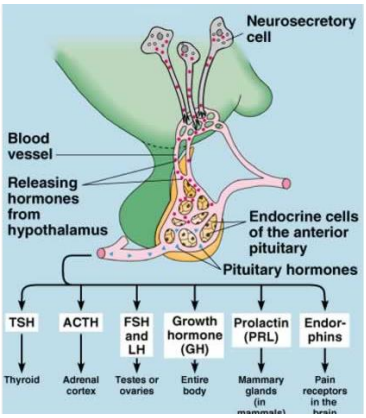
35 insulin, glucagon, adrenaline, cortisol

43 oxytocin → mammary glands & uterus, ADH → collecting duct in nephron

45 increase HR, increase BP, bronchiole dilation, increase blood glucose

47 hypothalamus has nervous control over anterior pituitary hormone release, make hormones stored & released from posterior pituitary





48 Answer back of textbook

54 a) A – they have elevated blood sugar levels which do not come back down meaning insulin is not working to remove glucose from the blood

b) D – glucagon releases glucose into the blood so little/no glucagon = low blood sugar

c) B – blood sugar rises after a meal as glucose enters blood from intestines but is then brought back down by the action of insulin