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SLHS 4301 Study Guide for Exam 1

Topics:

1. Introduction to Neuroscience, starting with Gall
Planes, sectional cuts and views of the brain, brainstem, spinal cord
Distinguish between CNS and PNS
Terminology – definitions and application; differences in names based on CNS or PNS
2. Gross anatomy: landmarks & structures of cortex, brainstem & subcortical structures
You need to be able to label major parts in various views (Use your lab and textbook for exercise).
 - Know functions of lobes and structures we discussed
 - Know functions of L & R hemispheres as it relates to language processing
 - Know functions of Broca's & Wernicke's areas, primary motor & sensory cortex; premotor cortex
 - White matter: types of connections, what they connect
3. Types of neurons & glial cells; anatomy of neuron
Understand the role of the cell membrane & conceptually how an impulse is propagated
 - Unmyelinated and myelinated neurons
 - Role of myelin, cells that produce it
 - Multiple sclerosis
 - Anatomy and processes involved in the synapse
4. Major neurotransmitters (ACh, dopamine)
 - neurotransmitter effects in nervous system; roles of neurotransmitters in myasthenia gravis, Parkinson's disease
5. Ventricular system: structure & function
 - Meninges: differentiate layers, location, formation
 - Ventricles
 - CSF – what produces it, where its found, how it 'flows', its function
 - Venous system: purpose & relationship with arachnoid villa (granulations)
 - Hydrocephalus: causes (What is the most common cause for hydrocephalus)
 - Meningitis: causes/types (Which is more severe? Which is more common?), symptoms
6. Diagnostic Techniques
 - Distinguish between types of techniques – know their usefulness, advantages/disadvantages
 - CT
 - MRI
 - DTI
 - Angiography
 - fMRI
 - NOTE: EEG will not be covered on this exam. We will review it in relation to the auditory system which will be covered in a few weeks.

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Sample questions

T/F, if F, change the statement by crossing out words and writing others to make it true:

_____ The right side of the cerebral hemisphere provides motor control for the right side of the body (i.e., arms, legs, feet)

Multiple choice:

When blood is found from a spinal tap, what does this tell you?

- a. that there is bleeding in the venous sinuses
- b. that the person has spinal meningitis
- c. that there is blood in the epidural space
- d. that there is blood in the subarachnoid space

Fill in the blank:

Which meningeal layer helps to form the venous sinus system? _____

Gray matter consists of _____ and _____ in the central nervous system, whereas most white matter has a layer of _____ wrapped around the axon which makes it look white.