FINAL EXAMINATION GUIDE
NEUROANATOMY
SPRING SESSION 2012

You will need to have a soft pencil (B or 2B are the best) for the Multiple Choice Question Scan Sheet. Also bring an eraser.

This is a guide to help focus your study appropriately in preparation for the final examination paper – **USE IT !!**.

The final exam consists of 60 multiple choice questions plus 24 true/false questions.

NB. Answer these on the Key Sheet provided.

Choose only ONE answer – the most correct.

These questions below are derived from the multiple choice questions that will be in the exam, to assist your study. In some cases, I have added a statement in ( ) to give more specific guidance where appropriate. Each of these questions below may be addressed by one (or very occasionally two) multiple choice questions.

1. Which of the following are all interneurons?
Interneurons are contained entirely within a local region.

An interneuron is a multipolar neuron which connects afferent neurons and efferent neurons in neural pathways. Found within the central nervous system. CNS interneurons are typically inhibitory, and use the neurotransmitter GABA or glycine.

Nonpyramidal - GABA
Stellate cell
Basket cells
Golgi cells
Granule cells
Chandelier cells
Double bouquet cell
Purkinje cell (of cerebrum)

2. Which of the following are both output (projection) neurons?
Pyramidal cells - Glutamate
Purkinje cells (← only output neuron of the cerebellum)
Granule cells

3. In the peripheral nervous system, myelinated fibres... (classification of fibres)

Speed up the conduction of nerve impulses and signal transmissions to the PNS.

Size	Speed		
Ia, Ib	α (Aα)	Fast	Large
II	β (Aβ)	↓	↓
	γ (Aγ)		
III	δ (Aδ)		
	B		
IV	C	Slow	Small

4. Schwann cells... (function)
Schwann cells or neurolemmocytes are the principal glia of the peripheral nervous system (PNS). Schwann cells are involved in many important aspects of peripheral nerve biology - the conduction of nervous impulses along axons, nerve development and regeneration, trophic support for neurons, production of the nerve extracellular matrix, modulation of neuromuscular synaptic activity, and presentation of antigens to T-lymphocytes

These are the glia of the peripheral nervous system that myelinate axons (help influence conduction), and hold multiple axons together. They contribute to the maintenance of extracellular chemical balance, and are involved in some metabolic processes together with neurons. Axonal repair mechanisms rely on Scwhann cells to help guide regenerating axons. Following damage they can become phagocytic to help clear debris.

5. Protoplasmic astrocytes are found in...
Gray Matter (Branch of the CNS glial cells. Provide mechanical and metabolic support, response to injury, blood brain barrier etc. Multifunctional)

6. Cells of the CNS with the greatest role in immune function are the...
Microglia

7. CSF is secreted by...
The choroid plexus (choroid epithelium). Each of the four ventricles contain strands of highly convoluted and vascular membranous material called the choroid plexus that secretes most of the CSF.

8. Neocortical layer V projects predominantly to...
Subcortical sites, brain stem and spinal cord are located in layer V.

- V = Internal pyramidal layer, the inner bands of Baillarger.

Layers	Projections
I. molecular layer (most superficial)	
II. External granular layer	Ipsilateral and contralateral cortex.
III. External pyramidal layer	Ipsilateral and contralateral cortex.
IV. Internal granular layer	Thalamus
V. Internal pyramidal layer	Subcortical sites, brain stem and

	spinal cord