Chapter 1

You should be able to provide definitions of the terms biological psychology, neuroscience and behavior.

You should be able to describe how different disciplines interact with biological psychology.

5 Viewpoints: 1) DB 2) E 3) D 4) BM 5) A

Continuity: behavior and biological processes (conserved characteristics) because of common ancestry 2

Differences: Behavior and biology that have evolved as adaptation. 2

Conserved: A trait that is passed on from a common ancestor. 3

Ontogeny: Process of growing up and old. Changes over a life span. 3

Somatic Intervention- Alteration of a structure or function to see how behavior is altered. Add hormone

Behavioral interventions- Intervention in a behavior to see how structure of the brain or brain function is altered. Puts males in presence of females.

Correlation: Measures how much body measure varies with a behavioral measure. Correlation does not mean causation.

Neuroplasticity-Brain's ability to be changes be environment and experience. Isolated rats had a smaller olfactory bulb.

Level of analysis- Range from social interaction down to molecular level.

Reductionism-Breaks a system down into its smallest parts in order to study it.

Chapter 2

Neurons (nerve cells) and Glial cells (nonneural that provides support).

Neuron doctrine- Brain is composed of separate cells that are independent and information is transmitted via synapses. 1891?

Synapse: Tiny gap between neurons where info is passed.

Mitochondrion, Cell Nucleus, Ribosomes, and Endoplasmic Reticulum. Describe.

Input Zone- Dendrites

Integration-Soma

Conduction Zone-Axon

Output Zone- Terminals

You should be able to describe basic principles used by the different methods/techniques for visualizing the anatomy and/or function of the brain.

Golgi Stains, Nissl Stains, Autoradiography, MRI-fMRI-TDI, PET, ERPs, EEG, TMS.

You should be able to explain the different ways neuron can be classified. Motor, Sensory, Inter. Large=more complex

Multipolar Neurons: One axon with many dendrites.

Bipolar Neurons: One dendrite to one axon.

Monopolar Neurons: single branch that leaves soma in two directions.

Astrocyte: Star shaped, numerous processes, receive neural input and monitor activity.

Microglial: Small. Remove cellular debris from injured or dead cells.

Oligodendrocyte: Forms myelination on CNS.

Schwann: Forms myelination on PNS.

You should be able to explain the concept of neural plasticity in the context of the synapse.

Gross Anatomy (apparent to the naked eye) of the nervous system in general terms. PNS and CNS.

What functions are found in the central and peripheral systems and how are they related to each other.

PNS: Nerves (bundles of axons). Cranial, Spinal, and Autonomic.

Somatic nervous system: nerves interconnect the brain and the major muscles and sensory systems.

Cranial Nerves: 12 pairs. Sensory pathways from the brain. Motor pathways from the brain (5). Sensory and motor functions (4).

Spinal Nerves/Somatic nerves: 31 pairs. Each spinal nerve is the fusion of 2 distinct branches. Named for cord they are connected to: C8T12L5S5C1

Dorsal (Back): carries sensory info from the body to the spinal cord.

Ventral (Front): carries motor info from the spinal cored to the muscles.

Autonomic nervous system: Spans CNS and PNS. primarily control the internal organs.

Preganglionic Neurons: Runs from the CNS to the autonomic ganglia.

Autonomic ganglia: groups of nerves located outside CNS.

Postganglionic Neurons: Run from autonomic ganglia to targets in the body.

Autonomic Nervous System has three major divisions:

Sympathetic Nervous system: Preganglionic neurons, only in spinal cord, they innervate the sympathetic chain which runs the length of the spinal cord, prepares the body for action.

Parasympathetic Nervous System: Preganglionic neurons that arise in the cranial nerves and the sacral spinal cord. Opposition of sympathetic.