

Biol 2404 Lecture Outline for Exam III

Nervous System & Senses

I. Nervous System - General

General Structure

Nervous Tissue

Neurons

General Function

General Anatomy

Kinds of Neurons

Neuroglia

General Function

Kinds of Neuroglia

Synapses

II. Central Nervous System

Brain

Gray Matter vs White Matter

Parts of Brain

Brain Stem

Medulla Oblongata

Pons

Midbrain

Reticular Formation

Diencephalon

Epithalamus

Thalamus

Hypothalamus

Limbic System

Cerebellum

Cerebrum

General Structure & Function

Lateralization of Hemispheres

Lobes of Cerebrum

Frontal (& Prefrontal) Lobe

Parietal Lobe

Occipital Lobe

Temporal Lobe

Spina Cord Structure & Function

III. Protections of CNS

Bone

Adipose Tissue

Meninges

Layers of Meninges

Folds of Meninges

Cerebrospinal Fluid

Ventricles

Circulation

Choroid Plexuses

Arachnoid Villi

IV. Peripheral Nervous System

General Terminology: CNS vs PNS

Nerves vs Nerve Cells (Neurons)

Fibrous Connective Tissue Layers

Kinds of Nerves by Function

Ganglia

Nerve Plexuses

Kinds of Nerves by Structure

Cranial Nerves

Spinal Nerves

Attachment to Spinal Cord

Dermatomes (Segmental Arrangement)

Spinal Nerve Plexuses

Somatic vs Autonomic Motor Nerves

Sympathetic vs Parasympathetic Nerves

Differences in Structure

Differences in Function

Interactions between the Two

V. Neurophysiology

Membrane Potential

Action Potential

Nerve Impulse

Synapses & Neurotransmitters

Reflexes

Reflex Arc

VI. Aging and Diseases of the Nervous System

VII. The Senses

Introduction to the Senses

Reception vs Perception

Reception is Determined By:

Source of Stimuli

Kind of Transducer

Density of Receptors

Intensity of Stimulus

Duration of Stimulus & Adaptation

Distribution of Receptors

General

Special Senses

Structure of Receptor

Cutaneous Sensations (Touch)

Taste

Smell

Vision

Structure of Eye & Accessory Structures

Physiology of Vision

Hearing

Structure of Ear

Physiology of Hearing

Major Proprioceptors

Static Equilibrium

Dynamic Equilibrium