**Reading Outline for Plotnik’s Introduction to Psychology, 4th Edition**

**Module 4 “Incredible Nervous System”**

**Introduction**

 ***How do brains differ?***

 Jason’s Brain: An Error in Instructions

 -

 -

 Lucy’s Brain: Perhaps the Beginning

 -

 -

 Steve’s Brain: A Cruel Twist of Fate

 -

 -

 Baby Theresa’s Brain: A Fatal Problem

 -

 -

1. **Genes & Evolution**

 1. Fertilization

 **-**

 **-**

 2. Zygote

 -

 -

 3. Chromosomes

 -

 -

 -

 4. Chemical alphabet

 **-**

 **-**

 **-**

 6. Fragile X syndrome

 -

 -

 **Evolution and the Human Brain**

 Charles Darwin –

 Theory of Evolution –

 -

 *Why did skulls grow in size?*

Lucy’s Brain: Perhaps the Beginning

 -

 -

 -

 Homo erectus

 -

 -

 -

 Homo sapiens

 -

 -

 -

**B. Studying the Living Brain**

 New Techniques

 -

 -

 CAT Scans –

 MRI Scans –

 -

 -

 PET Scans –

 -

 -

**C. Organization of the Brain**

 *Divisions of the Nervous System*

 -

 1. Two Divisions of the Nervous System

*Peripheral Nervous System*

 -

 -

*Central Nervous System*

 -

 -

 2. Two Subdivisions of Peripheral Nervous System

 *Somatic Nervous System*

 -

 -

 -

 *Autonomic Nervous System*

 -

 -

 3. Two Subdivisions of Autonomic Nervous System

 *Sympathetic Division*

 -

 -

 *Parasympathetic*

 -

 -

 *What Are the Three Major Parts of the Brain?*

1. Forebrain

-

-

-

1. Midbrain

-

-

-

 3. Hindbrain

 -

 3a. Pons

 -

 -

 3b. Medulla

 -

 -

 3c. Cerebellum

 -

 -

 -

**D. Control Centers: Four Lobes**

 The Cortex –

 -

 -

 -

 Frontal Lobe and Frontal Lobotomy

 -

 -

 *First Frontal Lobotomy: An Accident*

 -

 -

 -

 -

 *What is a Frontal Lobotomy?*

 -

 -

 -

 *What Did Lobotomies Do?*

 -

 -

 -

 Frontal Lobe: Functions

1. Motor Cortex

-

-

 2. Motor Cortex Organization

 -

 -

 3. Cognitive Functions

 -

 -

 -

 Parietal Lobe: Functions

 -

 1. Somatosensory Cortex –

1. Somatosensory Cortex Organization

-

-

 3. Cognitive Functions

 -

 -

 Temporal Lobe: Functions

 -

 1. Audition or Hearing

 -

 -

 -

 2. Wernicke’s Area

 -

 -

 -

 3. Broca’s Area

 -

 -

 -

 Occipital Lobes: Functions

 -

 1. Vision

 -

 -

 -

 2. Visual Agnosia

 -

 -

 3. Neglect Syndrome

 -

 -

**E. Limbic System: Old Brain**

 *Structures and Functions of the Limbic System*

 -

 -

 1. The hypothalamus –

 2. The amygdala –

 -

 - receives input from all the senses

 3. The hippocampus –

 -

 4. The thalamus –

 -

Autonomic Nervous System

 *What happens to your body when you see a snake or meditate?*

*Sympathetic Nervous System*

 ***-***

 ***-***

 **-**

 *Parasympathetic Nervous System*

 -

 -

 -

 Homeostasis

 -

 -

**F. Endocrine System**

 -

 Hypothalamus –

 Pituitary gland –

 *Dysfunction:*

 Posterior pituitary –

 *Dysfunction:*

 Anterior pituitary –

 *Dysfunction:*

 Pancreas –

 *Dysfunction:*

 Thyroid –

 *Dysfunction:*

 Adrenal glands –

 *Dysfunction:*

 Gonads –

 *Dysfunction:*

G. Research Focus: Sexual Differences

 *Are There Sexual Differences in the Brain?*

 *-*

 *-*

 *Rotating Figure Problem*

 *-*

 *-*

 *-*

 *Brain Organization*

 *-*

 *-*

 *-*

 *-*

**H. Cultural Diversity: Racial Myths**

 Skull Size and Intelligence

 -

 -

 -

 Brain Size and Intelligence

 -

 -

 -

 *What does a positive correlation between brain size and intelligence mean?*

 -

 -

**I. Application: Split Brain**

 *What is a Split Brain?*

 -

 -

 -

 -

 *How Does a Split-Brain Person Behave?*

 -

 -

 -

 *How Is a Split-Brain Person Tested?*

 *-*

*-*

 *Do the Hemispheres Have Special Tasks?*

 Left Hemisphere

 -

 -

 -

 Right Hemisphere

 -

 -

 -

 How Do Brain Parts Interact?

 *How is my brain organized?*

 -

 -

 *Am I “left-brained” or “right-brained”?*

 -

 -

 -

 *Does the brain get better with use?*

 -

 -

 -