

EXAM 1 Study Guide

Chapter 1 – The Science of Psychology

Psychology- scientific study of behavior and mental processes; philosophy

What does it mean to be scientific?

Empirical approach-gaining knowledge through observations/collections

Unbiased

Critical thinking-asking questions

Behavior- natural things we do that can be observed

Mental processes-thoughts/feelings that is experienced privately/ not observable

Goals of Psychology

Describe, explain, predict, and control behavior

History

Wilhelm Wundt-German

Structuralism- basic elements of mental processes; what is the mind?

Reaction time

Introspection

Gestalt Psychology

William James

Functionalism- functions/purposes of the mind/behavior to the environment

John Watson

Behaviorism-physically observed behavior of people/animals

Little Albert Experiment

Psychology Today

Biological- focusing on brain/nervous system

Behaviorism- physically observed behavior of people/animals

Psychodynamic-unconscious thoughts/early childhood experiences

Humanistic-persons' positive qualities for growth/freedom

Cognitive-think, remember, store and use information

Evolutionary-natural selection; adaptation and evolution of behavior

Sociocultural-social interactions of behavior/mental processes around the world

Scientific Method

Steps of the scientific method-observe, form H, test H, conclusions, results

Research Methods- Descriptive, Correlational, Experimental

Descriptive research- describing phenomenon

Naturalistic Observation- natural behavior

Case Study- study on one person in depth

Surveys

Correlational Research- relationships between 2 variables

Cannot determine cause-effect

Characteristics

Strength-Strong vs. Weak

Direction-Positive Correlations/Negative correlations

Correlation Coefficients (r)

Experimental Research- manipulates variables, holding factors constant

Can determine cause-effect

Operational Definitions- measure and observation of variables

Independent variable vs. Dependent variable

Experimental group (actual) vs. Control group (placebo)

Chapter 2 – The Brain and Behavior

Nervous system- body's electrochemical communication system

What is electrochemical communication system?

Behavioral Neuroscience-how NS affects/controls behavior

Electrochemical transmission

Electrical impulse and chemical message

Organization of the nervous system

Brain- Hindbrain-medulla (functions)/cerebellum (balance)/pons (sleep)

Central Midbrain-tectum/tegmentum (visuals), R.Formation (arousals)

Forebrain- Limbic Sys.- amygdala-fear anxiety

hippoC-learning memory

hypot-body regulation

Spinal Cord

Thalamus- sensory

Basal Ganglia

Cere.Cortex- Frontal-prefrontal/motor

Parietal- somatosensory

Temporal-auditorial

Occipital-visual

Peripheral- connects brain and SC to parts of body

Autonomic- takes messages/monitors heart rate,digestion

Sympathetic- activates when aroused for action

Parasympathetic-inhibits after being relaxed

Somatic- relays on info for responses/functions muscles

Sensory

Motor

Neurophysiology of the Peripheral Nervous system

Autonomic nervous system – involuntary motor system

Sympathetic – fight or flight

Parasympathetic – calm

Somatic- convey information to CNS (pain;temperature)

Sensory info

Voluntary movement

Neurophysiology of the Brain

Hindbrain structures

- Medulla** – vital functions
- Pons** – sleep and arousal
- Cerebellum** – balance and coordination

Midbrain structures

- Tectum and Tegmentum** – visual reflexes
- Reticular formation** – arousal
- Brainstem** – Medulla, pons, and reticular formation

Forebrain structures

- The limbic system** – emotions and memory
 - Amygdala** – fear and anxiety
 - Hippocampus** – learning and memory
 - Hypothalamus** – body regulation
- The Thalamus** – sensory relay station
- Basal Ganglia** – movement

The Cerebral Cortex

- Right vs. left hemispheres**
- Contralateral organization**
- The corpus callosum**- connects right/left hemispheres
- 4 lobes**
 - Frontal lobe**
 - Prefrontal cortex** – higher cognitive thinking
 - Motor cortex**
 - Temporal lobe**
 - Auditory cortex**
 - Parietal lobe**
 - Somatosensory cortex**
 - Occipital lobe**
 - Visual cortex**

Viewing the brain

Imaging the brain

- Computerized Tomography (CT) scans**
 - Uses multiple x-rays
- Magnetic Resonance Imaging (MRI)**
 - Uses large magnetic fields and radio frequency waves

Measuring activity in the brain

- Electroencephalogram (EEG)**
 - Measures surface brain activity through the skull