

Study Guide for Exam 1

Note: Students are responsible for all lectures and assigned material regardless of what is on this guide. Items marked with an asterisk (*) are covered primarily or exclusively in the textbook, not in lecture notes.

HISTORY

- What do Empiricism, Rationalism, and Nativism refer to with respect to knowledge?
- What is Idealism? Materialism? Dualism? What view do most scientists take today?
- What is the *mind-body problem*? Who proposed it?
- What is Phrenology? Who proposed it? Why is it interesting?
- Who was Phineas Gage? Why is he an important figure in cognitive neuroscience?
- What is Structuralism and why was it considered a form of "mental chemistry"?
- What is *introspection* and why did it fail as a central method in psychology?
- What is Functionalism? Who proposed it?
- What was the central claim of Behaviorism? How does it differ from cognitive psychology? Why do many scientists reject a strict form of Behaviorism?
- What is the difference between classical & operant conditioning?
- What is the central idea between Gestalt Psychology?
- How are Piaget & Chomsky relevant to cognitive psychology?
- How did Human Factors, Communication Science, & Information Theory contribute to the emergence of cognitive psychology?
- What is the *computer metaphor of mind*?
- What is the Information Processing Approach to cognition?
- What are the main ideas that define the Connectionist Approach to cognition?
- What are the main ideas behind the Evolutionary* & Ecological* approaches to cognition?

METHODS

- What is a *baseline* and why is it important in measuring cognitive performance?
- What is Signal Detection Theory? List & define the primary *observed* data in a signal detection experiment? What are sensitivity & bias?
- What is meant by the term *mental chronometry*?
- What is the difference between a Simple RT task and a Choice RT task. How are these tasks used in Donder's Subtraction Technique?

THE BRAIN

- In general, what are the somatic & autonomic (para/sympathetic) nervous systems?
- What are the main structural features of a neuron?
- What is the defining difference between sensory, motor, & interneurons?
- What are the main components of a synapse?
- What are glial cells and what is their general role in the brain?
- What is myelin sheath and what does it do?
- What is the difference between white matter vs. grey matter?
- What is the general sequence of events in neural communication.
- What's the difference between a resting, graded, & action Potential.
- What is a neuron's resting level of activation? What is its firing threshold?
- What are neurotransmitters?
- What are the main neural structures to be found in the brain stem, and what functions do they perform?