

Study Guide for Exam 1

This study guide will assist you in using the book material to prepare for the first exam. It does not include information from class that will be covered on the exam (although much of this material from the book overlaps with material from class). The class material will be very important to study as well, as anything we have covered during class could be on the exam. I recommend that you use this guide to help prioritize your studying, but do not do so to the exclusion of reading the chapters in their entirety. If you focus only on individual terms and pieces of information, you will miss the larger picture that comes with seeing how these terms are related to one another. You will probably need to read the text chapters very carefully a couple of times in order to absorb the information accurately. I encourage you to do this and to ask me questions about parts you find confusing.

Important Terms and Concepts

It would be good to be able to define these terms and understand how they are related to the topics we have been discussing in class. Do not just memorize the definitions word-for-word. If you do this, you will run into trouble when you need to apply these terms to new scenarios on the exam. Instead, you will learn best if you learn the meaning of these definitions--try to define them in your own words and then check the book's definition to see if you were accurate.

Psychology	Mental Processes	Behavior
Level of the Brain	Level of the Person	Level of the Group
Structuralism	Functionalism	Psychodynamic Theory
Behaviorism	Humanistic Psychology	Cognitive Psychology
Evolutionary Psychology	Clinical or Counseling Psychologist	Developmental Psychologist
Cognitive Psychologist	Social Psychologist	Personality Psychologist
Physiological Psychologist	Scientific Method	Replication
Hypothesis	Operational Definition	Theory
Case Study	Survey	Correlation Coefficient
Independent Variable	Dependent Variable	Confound
Experimental Group	Control Group	Random Assignment
Meta-analysis	Sample	Population
Naturalistic Observation	Bias	Response Bias
Sampling Bias	Experimenter Expectancy Effects	Double-Blind Design
Informed Consent	Debriefing	Neuron
Motor Neuron	Sensory Neuron	Interneuron
Glial Cells	Axon	Terminal Button
Dendrite	Resting Potential	Action Potential
Myelin	Synapse	Neurotransmitters
Acetylcholine	Dopamine	Serotonin
Peripheral Nervous System	Autonomic Nervous System	Sympathetic Nervous System
Parasympathetic Nervous System	Central Nervous System	Corpus Callosum
Cerebral Cortex (Cerebrum)	Occipital Lobes	Temporal Lobes
Parietal Lobes	Frontal Lobes	Forebrain
Thalamus	Hypothalamus	Hippocampus

Amygdala	Medulla	Reticular Formation
Cerebellum	Hindbrain	Midbrain
Hormones	Neuroendocrine System	Heritability
Twin Study	Adoption Study	Evolution
Natural Selection	Adaptation	

Chapter 1

From what three levels of analysis might psychologists study behavior and mental processes? Why might it be important to use all three levels of analysis?

The “Psychology Then and Now” section on pp. 9-19 describes a number of people who contributed to psychology’s history. Although these people are important and interesting, on the exam you will NOT need to identify a particular person with what s/he did or thought. Instead, read this section for major themes and trends. For example, from what fields did psychology emerge? Be able to contrast (know the difference between) the major schools of thought (structuralism, functionalism, Gestalt psychology, psychodynamic theory, behaviorism, humanistic psychology, cognitive psychology, evolutionary psychology) and understand basically how current psychology was influenced by these approaches to understanding human behavior. The information in Table 1.1 will help you understand the differences between these schools of thought.

Psychology is a diverse field. Be able to give examples of what psychologists in various subfields of psychology study or do. Table 1.2 summarizes this information nicely. Especially focus on those areas that we also covered in class.

What steps are involved in the scientific method? Be familiar with each of the steps and what they involve.

What are the key differences between and advantages/disadvantages of experimental research, correlational research, and descriptive research? Be familiar with the features of experimental research. If I were to describe a research study to you, you should be able to identify the independent and dependent variables and the experimental and control groups. What is a confound? How does random assignment reduce the risk of confounds?

What is involved in correlational research? Be familiar with various types of correlations (e.g., positive and negative; correlation coefficients that are close to +1.00, close to -1.00, and in between). If I give you an example of a correlation coefficient that some researchers found between two variables, be sure you can describe what they coefficient tells us about the relationship between those variables. Why is it that we cannot infer causation on the basis of correlational research?

Be able to describe what researchers would be doing if they were conducting research using naturalistic observation, case studies, surveys, or meta-analyses. What are some strengths and limitations of each?

What is the difference between a sample and a population?

For this exam, you do NOT need to distinguish between the different types of validity described on p. 35.

What are some problems researchers encounter when studying human behaviors or mental processes? Be familiar with the ideas of response bias, sampling bias, and experimenter expectancy effects. How do double-blind research designs help minimize expectancy effects?

What must researchers do in order to conduct ethically sound research and clinical practice? What are arguments in favor of and opposed to the use of animals in research?

At the end of Chapter 1, in the practice test, all the questions EXCEPT numbers 4 and 12 are examples of what might be covered by the exam. Question 11 is an especially good example because it does not require you simply to recognize information in the form in which it appeared earlier—it requires you to use the information as it applies to a new situation. There will be many questions of this type on the exam.

Chapter 2

Be able to describe the basic process through which information travels through a neuron. Where does the information come from, what part of the neuron detects this information, and then what does the neuron do with this information? How does communication between neurons occur? Be familiar with some of the functions of the major neurotransmitters (especially those we also discussed in class). For example, in what parts of human behavior does Acetylcholine play a role? How about Dopamine? Serotonin? (See Table

2.1).

For this exam, you do NOT need to know the difference between neurotransmitters and neuromodulators, and you do NOT need to know about the difference between agonists and antagonists.

Be familiar with the major nervous system parts and their relationship to one another (Figure 2.6). You should also know what the major purposes of each system are. If I give you an example of someone who has received damage to some portion of the nervous system, you should be able to describe what functions that person might lose.

The text presents many parts of the brain. You should be familiar with the role in human behavior played by the parts of the brain we also discuss in class. I will NOT ask you about parts of the brain we do not discuss in class, and you will NOT need to be able to pinpoint where these parts of the brain are (i.e., I will not draw diagrams of the brain on the exam and ask you to identify parts). You should be able to predict what would happen to a person's behavior if s/he received damage to various parts of the brain.

Be familiar with the main purpose of the neuroendocrine system. However, you do NOT need to know its parts for the exam.

You do NOT need to know about split-brain research and functioning. However, the text's description of this research should help clarify what we discuss in class, so I do recommend that you read this section (pp. 69-71).

The text describes methods used by researchers and physicians to examine the brain and nervous system (pp. 79-83). You should read these in case you or your family members ever need to have one of these procedures, but you do NOT need to be able to distinguish between them for the exam.

Know the basic processes through which genes affect us. For this exam, I will NOT ask you about the difference between Mendelian and complex inheritance, however. What is the relationship between genes and the environment? Be familiar with the complex interplay between these two.

What is heritability? How do researchers determine the heritability of our characteristics? What is the logic behind twin studies and adoption studies?

What does evolution have to do with understanding human behaviors and characteristics? Be familiar with the ideas of natural selection and adaptation.

At the end of Chapter 2, all the questions EXCEPT 3, 5, 9, 11, and 12 are good examples of what might be on the exam.

Additional Practice Questions

It is important for you not just to memorize definitions and facts. In the real world you'll need to be able to apply what you learn to new situations. Therefore, I will ask you to do this for the exam. Here are some examples of questions that require you to apply material from this unit of the course to new situations.

This scenario is used for questions 1-6: A researcher tests the hypothesis that physical exercise makes people happier. She asks some participants in a study to do vigorous exercises for one hour, and other participants do no physical exercises. Then, the researcher asks them to complete a questionnaire that assesses their happiness. The participants in the experimental group participate on Monday and Tuesday, and the participants in the control group participate on Wednesday and Thursday.

1. What is the independent variable in this study?

- a. the hypothesis b. the day of the week c. exercise d. happiness

2. What is the dependent variable in this study?

- a. the hypothesis b. the day of the week c. exercise d. happiness

3. What is the day of the week in this study?

- a. the hypothesis b. a confound c. the experimental group d. the control group

4. The control group in this study was made up of participants who

- a. exercised b. did not exercise c. did not participate in the study d. assisted the researcher

5. The experimental group in this study was made up of participants who

- a. exercised b. did not exercise c. did not participate in the study d. assisted the researcher

6. The researcher used a(n) _____ design for this study.

a. correlational b. experimental c. case study d. random

7. In looking through some medical records you find that there is a strong relationship between depression and chronic pain. The stronger the physical pain that people report, the higher their scores on an inventory that measures depression. Which of the following is the best conclusion?

- a. Depression tends to produce chronic pain.
- b. Chronic pain tends to produce depression.
- c. Both chronic pain and depression result from some unknown third factor.
- d. Depression could have caused the pain, pain could have caused the depression, or both pain and depression could have been caused by an unknown third factor.

8. Suppose that researchers find an inverse relationship between alcohol consumption and speed of response. The more alcohol consumed, the slower the response. Which of the following correlation coefficients might represent that finding?

- a. -4.57 b. -.87 c. .91 d. .05

9. Jerry was recently in a car accident in which he received an injury to the brain. He now has difficulty hearing out of his right ear, although there was no damage to the structure of his ear. It is most likely that Jerry's _____ was damaged in the accident.

- a. right occipital lobe b. left occipital lobe c. right temporal lobe d. left temporal lobe

10. If an evil scientist wanted to completely stop neurons from communicating messages to other neurons, the best and most direct way to do this would be to develop a procedure that destroys _____.

- a. terminal buttons b. the glial cells c. the myelin sheath d. the parietal lobe

11. Alexander realized that, without his thinking about it, his heart was beating, his respiratory system was functioning, and he was digesting last night's dinner. All this is possible because of his _____ nervous system.

- a. somatic b. parasympathetic c. sympathetic d. autonomic

Answers: 1. c, 2. d, 3. b, 4. b, 5. a, 6. b, 7. d, 8. b, 9. d, 10. a, 11. d

Good luck! Please see me if you have questions about any material covered in the text or lectures. I will be happy to help you be prepared for the exam and understand how the material relates to your life.