
Principals Features

Genetics and Evolutionary Psychology

Question: What is the study of genetics? (38)

Question: What's the meaning of the following statement?

"Psychologists know that some behaviors show high degrees of heritability …"

Example] Heritability.
Nature and Nurture

Complete the following:

"Nature consists of a person's …

" … nurture refers to

Question: How important is genetic inheritance for behavior?

The Basics of Genetics

Question: What are chromosomes?

Question: What are genes?

Question: What is a dominant gene?

Question: What is a recessive gene?
The Basics of Genetics
(Continued)


Question: What are genetic mutations?

Mapping the Genome

Question: What is the genome?

Question: What is genetic mapping?

[Example] Genetic mapping.
Each Human Being Is Unique

Question: What is the field of behavioral genetics?

Question: What's the meaning of the following statement?

"Researchers … talk of the heritability of a trait or behavior."

"(some) disorders are multigenic."


The Evolutionary Approach to Psychology

Question: What is evolutionary psychology?
NATURAL SELECTION.

Complete the following:

"Natural selection is the principle that those characteristics and behaviors that help organisms adapt, be fit, and survive are the ones that will be …

Question: What do evolutionary researchers say about adaptation?

[Examples] Adaptation.

EVOLUTION AND DETERMINISM.

Question: What is behavioral determinism?

Question: What's the meaning of the following statement?

"Our evolved tendencies interact with today's novel environments."
KEY QUESTIONS.

**Question:** What's the meaning of the following statement?

"… evolutionary psychology … addresses questions that psychology has ignored in the past." (45-46)

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**Communication in the Nervous System**

Complete the following:

The nervous system consists of the structures and organs that facilitate … (46)

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**The Neuron**

**TYPES OF NEURONS.**

**Question:** What are afferent neurons? (45)

**Question:** What are efferent neurons?
The Neuron
(Continued)

Question: What are *sensory neurons*? (46)

Question: What are *motor neurons*?

Question: What are *interneurons*? (46-47)

Question: What are *glial cells*? (47)

Question: What is the *myelin sheath*?

■ PARTS OF A NEURON.

Question: What are *dendrites*?
The Neuron
(Continued)

Question: What is an axon? (47)

- NEURONAL SYNAPSES.

Question: What is the synapse? (48)

- ELECTROCHEMICAL PROCESSES

Question: What is cell polarization?

- ACTION POTENTIAL.

Question: What is cell action potential? (48-49)

Question: What is the cell refractory period? (49)
Neurotransmitters and Behavior

Question: What are neurotransmitters?

Question: What is the process of reuptake?

Question: What is the process of postsynaptic potential?

Note the effects of the following neurotransmitters.

- GABA
- Serotonin
- Acetylcholine
- Dopamine
- Norepinephrine
Neurotransmitters and Behavior

(Continued)

Question: What are endorphins? (50)

PSYCHOPHARMACOLOGY.

Question: What is psychopharmacology?

Question: What are agonists? (51)

Question: What are antagonists?
The Organization of the Nervous System

The Peripheral Nervous System

Question: What is the peripheral nervous system? (51-52)

THE SOMATIC NERVOUS SYSTEM.

Question: What is the somatic nervous system? (52)

THE AUTONOMIC NERVOUS SYSTEM.

Question: What is the autonomic nervous system? (52-53)

Question: What is the sympathetic nervous system? (53)

Question: What is the fight-or-flight response?
THE AUTONOMIC NERVOUS SYSTEM.
(Continued)

[Example]  Fight-or-flight response.

Question:  What is the **parasympathetic nervous system**?

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The Central Nervous System

Question:  What is the **central nervous system**?

Complete the following:

"The **spinal cord**, contained within the spinal column, receives signals from the …"
The Central Nervous System
(Continued)

Question: What are spinal reflexes?

The Organization of the Brain

Five Principles Governing Brain Organization

Complete the following:

The brain is the part of the central nervous system that …

Note the five principles governing brain organization.

• First

• Second

• Third

• Fourth

• Last
The Brain's Main Divisions

Complete the following:

"As a general principle, the structures lower in the brain tend to be responsible for …

" … and those toward the top are involved in more …

The Hindbrain and Midbrain

Question: What is the Hindbrain?

Question: What is the medulla?

Question: What is the pons?

Question: What is the cerebellum?
The Hindbrain and Midbrain
(Continued)

Question: What is the midbrain?

The Forebrain

Question: What is the forebrain?

THE THALAMUS AND HYPOTHALAMUS.

Question: What is the thalamus?

Question: What is the hypothalamus?

THE CORTEX.

Question: What is the cortex?
THE CORTEX.

(Continued)

Question: What is the traditional way to study the cortex?

THE LIMBIC SYSTEM.

Question: What is the limbic system?

Question: What is the amygdala?

Evidence] Discovery of the limbic system.
THE BASAL GANGLIA AND CORPUS CALLOSUM.

Question: What is the basal ganglia?

Question: What are the consequences of damage to the basal ganglia?

Question: What is the corpus callosum?

The Brain at Work

Question: What is the study of neuroanatomy?

Question: What's the meaning of the following statement?

"Neuroanatomists who study behavior often use a technique called ablation."
Monitoring Neuronal Activity

Note the following techniques used to study neural function.

- **Single-unit recording**

- **Electroencephalography** (electroencephalogram, or EEG)

- **CT (computerized tomography) scans**

- **PET (positron emission tomography)**

- **MRI (magnetic resonance imaging)**
Monitoring Neuronal Activity
(Continued)

- Functional MRI (fMRI)

[Evidence] Function and application of imaging techniques. (60-61)
Brain Specialization
The Left and Right of Things

SPLITTING THE BRAIN.

Question: What are split-brain patients?

Evidence: Study of split-brain patients.

GENDER AND THE BRAIN.

Question: What's the meaning of the following statement?

"People's misconceptions of brain hemispheric specialization have also led to theories on gender differences."
Plasticity and Change

Question: Does your brain stay the same from birth to death, or can it change through experience or simply through the passage of time?
Hormones and Glands

Question: What are hormones? (65)

Question: What are endocrine glands? (65-66)

Question: What is the pituitary gland? (66)

Question: What are androgens and estrogens?

Question: What is the pancreas and insulin?

Question: What are the adrenal glands?

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