**AP Psychology Practice Test 2**

**Biological Bases of Behavior**

Question 1

As Jill walked toward the stage to give her speech, her heartbeat accelerated, her blood pressure rose, and she began to sweat. Jill's state of arousal was activated by what part of the nervous system?

A. Central

B. Peripheral

C. Sympathetic

D. Parasympathetic

E. Cerebral

Question 2

What brain structure provides the major link between the nervous system and the endocrine system?

A. Amygdala

B. Cerebellum

C. Corpus callosum

D. Hypothalamus

E. Reticular formation

Question 3

Which part of the cerebral cortex directs the muscle movements involved in producing speech?

A. Amygdala

B. Angular gyrus

C. Broca's area

D. Reticular formation

E. Wernicke's area

Question 4

Which brain scan measures subtle changes in brain electrical activity?

A. CAT scan

B. EEG scan

C. fMRI scan

D. MRI scan

E. PET scan

Question 5

What parts make up the central nervous system (CNS)?

A. Brain

B. Spinal cord

C. Brain and spinal cord

D. Skull

E. All other nerves

Question 6

A squirrel fails to react with fear to a signal of impending shock if they have suffered damage to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Amygdala

B. Corpus callosum

C. Hippocampus

D. Hypothalamus

E. Thalamus

Question 7

The lateralization of brain function suggests that language functions are generally found in which hemisphere?

A. Left hemisphere

B. Frontal hemisphere

C. Hind hemisphere

D. Dorsal hemisphere

E. Right hemisphere

Question 8

In some neurons, the axon is insulated by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Ganglion

B. Nerve fiber

C. Myelin sheath

D. Pacinian sheath

E. Sylvian sheath

Question 9

The term central nervous system refers to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Autonomic system

B. Brain and the spinal cord

C. Cerebral cortex and the cerebellum

D. Grey matter

E. Spinal cord and the glandular system

Question 10

Sensory motor responses that are rapid and automatic are called \_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Affective

B. Instincts

C. Permeable

D. Reflexes

E. Reuptakes

Question 11

Humans have approximately 70,000 genes that are arranged on how many pairs of chromosomes?

A. 10

B. 23

C. 27

D. 46

E. 144

Question 12

The term "soma" is synonymous with \_\_\_\_\_\_\_\_\_\_\_.

A. Neuron

B. Dendrite

C. Cell body

D. Axon

E. Synapse

Question 13

In 2001, scientists finished assembling the complete inventory of all human genes. What is this called?

A. Human Genome

B. Human Genotype

C. Human Meme

D. Human Phenotype

E. Human Phoneme

Question 14

A stroke patient is shown a vacation snapshot, which she describes as "man… tall… woman… hat… mountain… smiles." This patient is most likely suffering from which of the following conditions?

A. Broca's agnosia

B. Broca's aphasia

C. Schizophrenia

D. Wernicke's agnosia

E. Wernicke's aphasia

Question 15

The somatosensory area of the cerebral cortex is responsible for our sense of \_\_\_\_\_\_\_\_\_\_\_\_.

A. Hearing

B. Sight

C. Smell

D. Taste

E. Touch

Question 16

As the result of a cerebral hemorrhage, a patient lost the ability to breathe and died. An autopsy will show damage to what part of the brain?

A. Amygdala

B. Cerebellum

C. Hippocampus

D. Medulla

E. Midbrain

Question 17

Which of the following is not a neurotransmitter?

A. Acetylcholine

B. Dopamine

C. Epinephrine

D. Insulin

E. Serotonin

Question 18

Complete the analogy — left hemisphere is to right hemisphere as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A. Balance is to movement

B. Broca's area is to Wernicke's area

C. Hearing is to speaking

D. Language functioning is to spatial ability

E. Sensation is to action

Question 19

Travis and Reid were both seen stumbling down the street. Travis was drunk, which explained his lack of balance. Reid, on the other hand, was sober. He was unable to maintain his balance due to damage to a particular part of his brain. Where did this damage most likely occur?

A. Cerebellum

B. Medulla

C. Pons

D. Reticular formation

E. Thyroid

Question 20

What part of the brain has been surgically altered in "split-brain" patients? A. Cerebellum

B. Cerebrum

C. Corpus callosum

D. Distal cortex

E. Hippocampus

Question 21

Which hormone, secreted by the pineal gland, increases when periods of darkness begin and promotes feelings of drowsiness?

A. Cortisol

B. Epinephrine

C. Insulin

D. Melatonin

E. Testosterone

Question 22

A drug that enhances the effect of a neurotransmitter by mimicking its effects or by preventing its breakdown in the synapse is referred to as what?

A. An agonist

B. An antagonist

C. An excitatory postsynaptic potential

D. An inhibitory postsynaptic potential

E. A transducer

Question 23

Which of the following neurological disorders is associated with a deficiency of acetylcholine?

A. Alzheimer's disease

B. Autism

C. Huntington's disease

D. Parkinson's disease

E. Wernicke's aphasia

Question 24

Which of the following changes is not caused by the activation of the sympathetic nervous system?

A. Acceleration of heart action

B. Decrease in digestive secretions

C. Dilation of pupils

D. Opening of respiratory passages

E. All of the above are caused by activation of the SNS

**Answers and Explanations**

Question 1 Explanation:

The correct answer is (C). The sympathetic nervous system (SNS) is part of the autonomic nervous system (ANS), which also includes the parasympathetic nervous system (PNS). The SNS activates what is often termed the "fight or flight" response, which is described in the above example. The PNS brings the body back to normal and can be thought of as the "rest and digest" system (parasympathetic = parachute).

Question 2 Explanation:

The correct answer is (D). The hypothalamus is a section of the brain responsible for the production of many of the body's essential hormones, chemical substances that help influence different cells and organs. The hormones from the hypothalamus govern physiological functions such as temperature regulation, thirst, hunger, sleep, mood, sex drive, and the release of other hormones within the body.

Question 3 Explanation:

The correct answer is (C). Broca's area is one of the main areas of the cerebral cortex responsible for producing language. This brain area controls motor functions involved with speech production. Persons with damage to Broca's area of the brain can understand language but cannot properly form words or produce speech.

Question 4 Explanation:

The correct answer is (B). An electroencephalogram (EEG) is a method of detecting electrical activity in the brain using small, flat metal discs (electrodes) attached to the scalp. Brain cells communicate via electrical impulses and are constantly active, even during sleep.

Question 5 Explanation:

The correct answer is (C). The brain and spinal cord, together, make up the Central Nervous System. All other nerves are considered part of the peripheral nervous system.

Question 6 Explanation:

The correct answer is (A). The amygdala is a pair of almond-shaped tissues located deep in the brain's medial temporal lobe. It plays a key role in the processing of emotions, including fear; damage to the amygdala results in difficulties with decision-making, memory, and emotional response.

Question 7 Explanation:

The correct answer is (A). While many brain functions are not expressed solely by one hemisphere or another, language functions including grammar and vocabulary are typically found in the left hemisphere.

Question 8 Explanation:

The correct answer is (C). The myelin sheath insulates the axon, speeding up the process of neurotransmission.

Question 9 Explanation:

The correct answer is (B). The brain and spinal cord make up the central nervous system, as opposed to the peripheral nervous system, which includes the nervous system outside of the brain and spinal cord.

Question 10 Explanation:

The correct answer is (D). Reflexes are rapid, automatic responses that are neither conscious nor voluntary.

Question 11 Explanation:

The correct answer is (B). Human genes are arranged on 46 chromosomes, or 23 pairs, 22 of which are autosomes and 1 of which is a sex chromosome.

Question 12 Explanation:

The correct answer is (C). The soma, or cell body, of a neuron contains the nucleus of the cell along with its DNA and the metabolic machinery that keeps the neuron alive.

Question 13 Explanation:

The correct answer is (A). The term genome refers to the catalog of all genes of a species; the genotype refers to a particular variation of genes within an individual.

Question 14 Explanation:

The correct answer is (B). Patients with Broca's aphasia can convey content, but their speech is halting and unstructured. Broca's aphasia typically involves the omission of the articles 'a' and 'the.'

Question 15 Explanation:

The correct answer is (E). The somatosensory area receives afferent input from receptors in the skin that convey information about touch (mechanoreception), pain (nociception), and temperature (thermoception).

Question 16 Explanation:

The correct answer is (D). The medulla, located in the hindbrain, controls vital and autonomic life-sustaining functions including heartbeat, circulation and respiration.

Question 17 Explanation:

The correct answer is (D). Insulin is not a neurotransmitter; it is a hormone that regulates blood sugar levels.

Question 18 Explanation:

The correct answer is (D). Language is primarily a function of the left hemisphere, while spatial ability is primarily a function of the right hemisphere.

Question 19 Explanation:

The correct answer is (A). The cerebellum is responsible for maintaining, coordinating, and regulating muscular activity. The cerebellum plays a key role in balance.

Question 20 Explanation:

The correct answer is (C). "Split-brain" patients are those who have had their corpus callosum severed as a means of treating epilepsy that does not respond to medication. The corpus callosum is the thick bundle of nerves that connects the left and right hemispheres of the brain.

Question 21 Explanation:

The correct answer is (D). While all of these are hormones, melatonin is the only hormone listed that is secreted by the pineal gland. It is also the only hormone listed that helps regulate sleep.

Question 22 Explanation:

The correct answer is (A). An agonist enhances or mimics the effects of a neurotransmitter; an antagonist has the opposite effect and mitigates the effects of a neurotransmitter.

Question 23 Explanation:

The correct answer is (A). Alzheimer's disease is associated with a deficiency of acetylcholine.

Question 24 Explanation:

The correct answer is (E). All of these actions are caused by the sympathetic nervous system which prepares the body for action in response to an emergency or the presence of danger. The SNS is commonly associated with the 'fight-or-flight response.'