

Biopsych 202

Assignment 1

Review of attempt 1

40
40

The somatic nervous system

- ☐ a. is a division of the central nervous system. \times
- ☐ b. is a division of the peripheral nervous system. \times
- ☐ c. interacts with the external environment. \times

☒ d. b and c. \checkmark

BIOPSYCH 202 - HW1

Question 2

"Afferent" is to "_____", as "efferent" is to "_____."

- ☐ a. fast, slow \times
- ☐ b. strong, weak \times

☒ c. sensory, motor \checkmark

☐ d. deep, superficial \times

Question 3

The autonomic nervous system:

- ☐ a. participates in the regulation of the internal environment \times
- ☐ b. interacts with the external environment \times
- ☐ c. it includes the parasympathetic and sympathetic systems \times

☒ d. a and c \checkmark

Question 4

An increase in sympathetic activity results in:

☐ a. increase in salivating \times

☒ b. increase in heart rate and blood pressure \checkmark

☐ c. increase in appetite \times

☐ d. none of the above \times

Question 5

In general "sympathetic" is to "_____", as "parasympathetic" is to "_____."

☐ a. fat, slim ^x

☒ b. using energy, conserving energy [✓]

☐ c. cold, hot ^x

☐ d. nice, unpleasant ^x

Question 6

The order of the meninges, from inside the brain to outside, is:

☐ a. dura matter, pia matter, arachnoid ^x

☐ b. dura matter, arachnoid, pia matter ^x

☐ c. pia matter, dura matter, arachnoid ^x

☒ d. pia matter, arachnoid, dura matter [✓]

Question 7

The cerebrospinal fluid:

☐ a. cushions the brain against blows to the head ^x

☐ b. supports the brain inside the skull ^x

☐ c. is produced by the choroid plexuses in some of the ventricles ^x

☒ d. all of the above [✓]

Question 8

The blood-brain barrier:

☐ a. allows the passage of glucose into the brain ^x

☐ b. prevents the passage of many bacteria and viruses from the blood into the brain ^x

☐ c. occurs because the cells that make up the wall of the blood vessels in the brain are close together ^x

☒ d. all of the above [✓]

Question 9

Neurons are cells that:

☐ a. produce myelin ^x

☐ b. are found in the cerebrospinal fluid ^x

☐ c. form the blood-brain barrier ^x

☒ d. transmit signals in the brain ✓

Question 10

The parts of a neurons are:

☐ a. the soma ^x

☐ b. the dendrites ^x

☐ c. the axon ^x

☒ d. all of the above ✓

Question 11

Multipolar neurons have:

☐ a. many axons ^x

☒ b. many dendrites ✓

☐ c. only one axon and one dendrite ^x

☐ d. only one dendrite and many axons ^x

Question 12

Oligodendrocytes and Schwann cells are

☐ a. neurons ^x

☐ b. fat cells ^x

☒ c. glial cells ✓

☐ d. special blood cells ^x

Question 13

In the peripheral nervous system, myelin is produced by:

☒ a. Schwann cells ✓

☐ b. oligodendrocytes ^x

☐ c. astroglia ^x

☐ d. myelocytes ^x

Question 14

A section cut across the human head in the following plane could not possibly include both eyes:

☐ a. coronal ^x

☒ b. sagittal ✓

☐ c. horizontal ^x

☐ d. a and c ^x

Question 15

Dorsal and ventral horns are part of the:

☐ a. cerebral cortex ^x

☐ b. white matter in the spinal cord ^x

☒ c. gray matter in the spinal cord ✓

☐ d. third ventricle ^x

Question 16

The cerebral cortex is part of the:

☐ a. myelencephalon ^x

☐ b. mesencephalon ^x

☒ c. telencephalon ✓

☐ d. diencephalon ^x

Question 17

The hypothalamus plays an important role in:

☐ a. visual function ^x

☐ b. feeling of euphoria ^x

☒ c. regulating several motivated behaviors (feeding, sexual behavior, etc.) ✓

☐ d. the function of the hypothalamus is not known ✗

Question 18

The neocortex is made of _____ layers of neurons.

☐ a. one ✗

☐ b. three ✗

☐ c. four ✗

☒ d. six ✓

Question 19

The occipital lobe is the name of the:

☐ a. anterior part of the brain ✗

☐ b. the dorsal part of the brain ✗

☒ c. the posterior part of the brain ✓

☐ d. the ventral part of the brain ✗

Question 20

Damage of the basal ganglia (located deep in the telencephalon) is most likely to produce:

☐ a. alterations in visual function ✗

☐ b. deficits in memory ✗

☒ c. deficits in motor function ✓

☐ d. alterations in feeding behavior ✗

Question 21

The resting membrane potential is

☐ a. 70 millivolts, inside positive ✗

☒ b. 70 millivolts, inside negative ✓

☐ c. 70 volts inside negative ✗

☐ d. 0 millivolts ^x

Question 22

Electrical currents involved in the production of action potentials are produced by:

☐ a. movement of anions across the cell membrane ^x

☐ b. movement of cations across the cell membrane ^x

☒ c. a and b ✓

☐ d. none of the above ^x

Question 23

Marks: 1

Ions that are more concentrated outside the cells are:

☐ a. Sodium ions (Na^+) ^x

☐ b. Potassium ions (K^+) ^x

☐ c. Chloride ions (Cl^-) ^x

☒ d. a and c ✓

Question 24

In the cell membrane of axons, Na^+ ions cross through channels that:

☐ a. are very selective to the ions crossing ^x

☐ b. are voltage-gated ^x

☐ c. go through a refractory period after they are activated ^x

☒ d. all of the above ✓

Question 25

Two forces involved in the movement of electrical charges across the cell membrane are:

☐ a. gravity and hydrostatic pressure ^x

☐ b. mechanical force and inertia ^x

☒ c. concentration gradients and electrostatic pressure ✓

- ☐ d. none of the above ^x

Question 26

The axon hillock is:

- ☐ a. is a part of the neuron located at the junction between the cell body and the axon ^x
- ☐ b. is the region near which action potentials are normally produced ^x
- ☒ c. a and b ✓
- ☐ d. none of the above ^x

Question 27

Once an action potential is triggered in the axon, the action potential:

- ☐ a. diminishes in size as the action potential travels down the axon ^x
- ☐ b. increases in size as the action potential travels down the axon ^x
- ☒ c. remains about the same size ✓
- ☐ d. all of the above ^x

Question 28

The absolute refractory period:

- ☐ a. is the period in which it not possible to elicit another action potential in the same place of the membrane ^x
- ☐ b. it lasts about 1 to 2 milliseconds ^x
- ☐ c. is the period during which the membrane is more responsive ^x
- ☒ d. a and b ✓

Question 29

The first event in the generation of an action potential is the:

- ☐ a. influx of Na⁺ ions ^x
- ☐ b. efflux (outflow) of Na⁺ ions ^x
- ☒ c. opening of Na⁺ channels ✓
- ☐ d. opening of K⁺ channels ^x

Question 30

Ion channels on the axon hillock are:

- ☒ a. voltage-gated ✓
- ☐ b. chemically gated ✗
- ☐ c. mechanically gated ✗
- ☐ d. always open ✗

Question 31

Nodes of Ranvier:

- ☒ a. are places along the axon where there is no myelin ✓
- ☐ b. are found in neurons that are dying ✗
- ☐ c. are the points where axons produce branches ✗
- ☐ d. are found in some dendrites ✗

Question 32

Myelination increases the speed of axonal conduction because:

- ☐ a. action potentials travel faster in regions covered with myelin ✗
- ☒ b. myelination makes saltatory conduction possible ✓
- ☐ c. action potentials are smaller in myelinated regions ✗
- ☐ d. all of the above ✗

Question 33

In myelinated axons, action potentials can travel as fast as:

- ☐ a. the speed of sound ✗
- ☐ b. the speed of light ✗
- ☒ c. 224 miles/hour ✓
- ☐ d. 1020 miles /hour ✗

Question 34

MARK THE INCORRECT OPTION. Synaptic vesicles:

- ☐ a. are found in the presynaptic portion of the synapse ^x
- ☒ b. are found in the postsynaptic portion of the synapse [✓]
- ☐ c. contain neurotransmitters ^x
- ☐ d. they empty their content when Ca^{++} enters the presynaptic bouton ^x

Question 35

Regarding postsynaptic potentials:

- ☐ a. they are always of the same size ^x
- ☒ b. their size depends on the amount of neurotransmitter released into the synaptic cleft by the presynaptic neuron [✓]
- ☐ c. always depolarizing ^x
- ☐ d. they propagate by saltatory conduction ^x

Question 36

Ion channels on the postsynaptic membrane are opened by:

- ☐ a. a change in voltage ^x
- ☒ b. a chemical interaction [✓]
- ☐ c. a mechanical interaction ^x
- ☐ d. all of the above ^x
- ☐ e. none of the above ^x

Question 37

The arrival of an axon potential to the presynaptic bouton triggers the following events:

- ☐ a. entry of Ca^{++} into the presynaptic bouton ^x
- ☐ b. fusion of synaptic vesicles with the presynaptic membranes ^x
- ☐ c. exocytosis of the neurotransmitter from the synaptic vesicles into the synaptic cleft ^x
- ☒ d. all of the above [✓]

Question 38

The most common excitatory/inhibitory neurotransmitters are:

- ☐ a. aspartate/GABA ^x
- ☐ b. dopamine/epinephrine ^x
- ☐ c. serotonin/tyrosine ^x
- ☒ d. glutamate/GABA [✓]

Question 39

The excitatory postsynaptic potential (EPSP) triggers an action potential in the axon hillock of the postsynaptic neuron by:

- ☐ a. triggering an action potential at the synaptic site ^x
- ☐ b. opening Ca^{++} channels at the axon hillock ^x
- ☒ c. passive electrical conduction to the axon hillock [✓]
- ☐ d. all of the above ^x

Question 40

Neurotransmitters that have a fast action are typically:

- ☐ a. monoamine neurotransmitters ^x
- ☐ b. neuropeptides neurotransmitters ^x
- ☒ c. amino acid neurotransmitters [✓]
- ☐ d. hormones ^x