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## Functional Neuroanatomy of the Human Brain

LATEST SUBMISSION GRADE

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1. Which of the following principles are part of the Cajal's neuron doctrine?

1 / 1 point

☐ Neurons are *continuous* with each other but not *contiguous*

☒ The junction between the axon and the dendrite is the synapse

✓ **Correct**

☒ Neurons are *contiguous* (in close proximity without touching) with each other but not *continuous*

✓ **Correct**

☐ The junction between the dendrite and a blood vessel is the synapse

2. What statement about Excitatory post-synaptic potentials (EPSPs) is not true?

1 / 1 point

☒ Single EPSPs always cause a post-synaptic action potential

☐ Can be recorded by placement of electrode inside neuron where influx of ions causes increase in voltage

☐ Summation of EPSPs is often necessary to generate an action potential

☐ Can be recorded by placement of electrode outside neuron where positive ions flowing away from extracellular electrode causes a change in voltage

✓ **Correct**

3. What is the primary site of inter neuronal communication?

1 / 1 point

☐ Dendrite

☒ Synapse

☐ Axon

☐ Cell body

✓ **Correct**

4. What is the role of neurotransmitters in neuronal communication?

1 / 1 point

☐ Interrupt the electrical signaling and slow down brain activity

☒ Provide an additional method of neuronal communication through its release in the synapse and array of influences it can have on the post-synaptic cell.

☐ Continue the electrical signal by inducing a post-synaptic action potential

☐ Strengthen electrical brain activity by inducing a post-synaptic action potential in all surrounding neurons

✓ **Correct**

5. Which of the following statements about the neurotransmitter Glutamate is true?

1 / 1 point

☐ Patients with Schizophrenia have abnormally high levels of glutamate

☐ Glutamate is critically important for motor control and movements of the body

☐ Patients with Parkinson's Disease have abnormally low levels of glutamate

☒ Glutamate is the most common neurotransmitter in the nervous system

✓ **Correct**

6. Is a drug that will bind to and open the receptor channel.

1 / 1 point

- ☐ Competitive antagonist
- ☐ Non-competitive antagonist
- ☐ Agonist
- ☒ Receptor agonist

✓ Correct

7. A will allow the transmitter to bind to the receptor channel but will prevent it from opening the channel.

1 / 1 point

- ☒ Non-competitive antagonist
- ☐ Competitive antagonist
- ☐ Receptor agonist
- ☐ Agonist

✓ Correct

8. Which of the following statements about hormones is true?

1 / 1 point

- ☐ Hormones only affect certain downstream targets
- ☒ Hormones secreted in the blood can influence brain function
- ☐ Hormones are only secreted by the brain
- ☐ Hormones only affect organs in the body and not the central nervous system

✓ Correct

9. What is the function of cerebrospinal fluid (CSF)?

1 / 1 point

- ☒ All of these
- ☐ It protects the brain and spinal cord from trauma
- ☐ It removes waste products
- ☐ It supplies key nutrients

✓ Correct

10. What is the difference between grey matter and white matter?

1 / 1 point

- ☐ Grey matter is composed of mostly axon projections, while white matter is composed of cell bodies
- ☐ Grey matter supports information transmission while white matter supports information processing
- ☐ There is no difference between grey and white matter
- ☒ Grey matter is composed of mostly cell bodies, while white matter is mostly composed of axon projections

✓ Correct

11. The brain region in the center of the brain that consists of many individual nuclei and is considered the relay station of the brain is the \_\_\_\_\_.

1 / 1 point

- ☐ Cerebellum
- ☒ Thalamus
- ☐ Primary motor cortex
- ☐ Visual cortex

✓ Correct

12. What are the 4 major lobes of the brain?

1 / 1 point

- ☐ Parietal lobe; basal ganglia; frontal lobe; temporal lobe

- ☒ Occipital lobe; parietal lobe; temporal lobe; frontal lobe
- ☐ Occipital lobe; central lobe; frontal lobe; temporal lobe
- ☐ Occipital lobe; parietal lobe; basal ganglia; frontal lobe

✓ Correct

13. In order, what brain areas are involved in hearing a sentence, understanding it's meaning, formulating a response, and expressing the answer?

1 / 1 point

- ☐ Auditory cortex; angular gyrus; Wernicke's area; Broca's area; motor cortex
- ☐ Visual cortex; angular gyrus; Wernicke's area; Broca's area; motor cortex
- ☐ Auditory cortex; Broca's area; Wernicke's area; motor cortex
- ☒ Auditory cortex; Wernicke's area; Broca's area; motor cortex

✓ Correct

14. After bilateral resection of large sections of the medial temporal lobe to alleviate severe epileptic seizures patient H.M. suffered significant deficits in what cognitive domain?

1 / 1 point

- ☐ Working memory
- ☒ Learning new facts and events
- ☐ Motor control
- ☐ Language

✓ Correct

15. The study of amnesia patients like H.M. and E.P. provided critical support for which of the following discoveries?

1 / 1 point

- ☒ The brain has multiple independent systems that support learning and memory functions
- ☐ Language functions and IQ are critically dependent on structures of the medial temporal lobes.
- ☐ The brain contains highly specialized areas that support very specific functions like the fusiform face area.
- ☐ Resection of large sections of the medial temporal lobe is a successful treatment for severe seizure disorder

✓ Correct

16. A condition in which a patient is unable to generate fluent speech but knows what they want to say and understands words and simple sentences, is known as \_\_\_\_\_.

1 / 1 point

- ☒ Broca's aphasia
- ☐ Receptive aphasia
- ☐ Wernicke's aphasia
- ☐ Retrograde amnesia

✓ Correct

17. Which of the following statements about neuropsychological assessment is not true?

1 / 1 point

- ☐ Neuropsychological assessment is often used in longitudinal studies
- ☒ The examiner is responsible for providing an environment conducive to the patient's best possible performance including informal personalized tips and hints
- ☐ Neuropsychological assessment involves highly standardized administration and scoring of tests designed to assess cognitive and emotional functioning
- ☐ Typically, an individual's test performance is compared to a population average

✓ Correct

18. Neuropsychological assessment can be used for multiple goals. What is not a purpose of neuropsychological assessment?

1 / 1 point

- ☒ Selecting the best medication for treatment
- ☐ Research
- ☐ Diagnosis

☐ Patient care and planning

✓ Correct

19. What is the screening approach to neuropsychological testing?

1 / 1 point

- ☐ None of these
- ☒ Determining if a person meets certain specific cognitive criteria and if additional testing is required
- ☐ Assessing a specific question or domain in a detailed evaluation of one specific impairment or brain area
- ☐ Comprehensive assessment of all important cognitive domains and detailed testing to create a complete profile

✓ Correct

20. Which of the following statements about Neuropsychological Assessment is true?

1 / 1 point

- ☐ Neuropsychological assessment is only concerned with cognition and should not be used for questions regarding personality or emotions.
- ☒ All of these are false.
- ☐ To avoid confusion, when concerned about a single cognitive domain, a single assessment focused on that domain should be employed instead of multiple tests assessing multiple domains.
- ☐ Performance on a neuropsychological test should only be compared against population norms for that test.
- ☐ Neuropsychological assessment should only be used to aid in diagnosis of a cognitive disorder or deficit.

✓ Correct