COGS 17 A04 Midterm 1 Review

1) (Anatomy) Match the following structures with corresponding functions:

Structures:

* Corpus Callosum
* Blood-Brain Barrier
* Cerebellum
* Pons
* Basal Ganglia
* Meninges
* Hypothalamus

Functions:

* This structure is for the protection of the central nervous system, and it has three layers.
* This structure is located in CORTEX, for the connection between two hemispheres.
* This structure is located in HINDBRAIN, and it is the “bridge”. The main function of this structure is to carry sensory info from/to the lower/higher of the brain.
* This structure is located in FOREBRAIN, and it oversees “4Fs”. It also controls endocrine systems via effects on other gland
* This structure is located in HINDBRAIN, and it is for guiding movements and is also critical in timing actions & attention.
* This structure is located in TELENCEPHALON, and it’s involved in the control of movement, especially planned sequential behaviors. Also, it is involved in task settings.
* This structure strictly controls chemicals in the brain. Astrocyte is involved in the formation of this structure.

2) (Anatomy) List the structures that construct the central nervous system & peripheral nervous system.

CNS:

PNS:

3) (Anatomy) List the structures that construct the hindbrain, midbrain & forebrain.

Hindbrain:

Midbrain:

Forebrain:

4) (Anatomy) Indicate the effects of the Parasympathetic Nervous System and Sympathetic Nervous System.

|  | Parasympathetic | Sympathetic |
| --- | --- | --- |
| Pupils |  |  |
| Lungs |  |  |
| Heart |  |  |
| genitals |  |  |
| stomach |  |  |

5) (Cells) What is an action potential? Briefly describe the process of an

action potential.

6) (Cells) Which structure is responsible for the establishment of the resting potential? How does this structure help the neuron establish resting potential?

7) (Cells) How do cells speed up the transduction of neural signals? Is this kind of transduction electrical or chemical?

8) (Cells) Briefly explain the difference between ionotropic and metabotropic NTs.

9) (Cells) What is EPSP/IPSP? What are two types of summation of EPSP/IPSP and what are the differences between them?

10) (Cells) Describe several ways that can change the effectiveness of NTs.

11) (Development) What is the cause of Spina Bifida?

12) (Development) Briefly describe the proliferation, migration, and differentiation process.

13) (Development) What is synaptogenesis?

14) (Development) What is apoptosis and what causes it?

15) (Development) “Cells that \_\_\_\_ together, \_\_\_\_ together”.

16 (Development) Will adults grow new neurons in further brain development?