**Anatomy Worksheet 8**

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **The Nervous System: Brain and Cranial Nerves**

**Exercise 1.** The Brain: **1)** Match the terms in **Column A** with the descriptions provided in **Column B**.

**Column A**

A. Central sulcus

B. Cerebral cortex

C. Gyri (singular Gyrus)

D. Corpus callosum

E. Falx cerebelli

F. Hypothalamus

G. Insula

H. Medulla oblongata

I. Midbrain

J. Optic chiasm

K. Pineal gland

L. Pons

**Column B**

\_\_\_\_ 1. Structure formed at the point of the crossing-over (decussation) of the optic nerves.

\_\_\_\_ 2. Part of diencephalon that forms the lower walls and floor of third ventricle.

\_\_\_\_ 3. This pine cone-shaped structure is attached to the upper posterior portion of diencephalon.

\_\_\_\_ 4. Connects the cerebral hemispheres.

\_\_\_\_ 5. Ridge-like twists and folds on the surface of the cerebrum.

\_\_\_\_ 6. Landmark that separates the frontal and parietal lobes.

\_\_\_\_ 7. Part of brainstem between diencephalon and pons.

\_\_\_\_ 8. Rounded bulge on underside of brainstem; the name means ‘bridge’.

\_\_\_\_ 9. Part of brain stem that is continuous with the spinal cord.

\_\_\_\_ 10. A fold of dura mater that separates cerebellar hemispheres.

\_\_\_\_ 11. The cerebral lobe located deep within the lateral sulcus.

\_\_\_\_ 12. A thin portion of gray matter on the superficial surface of the cerebrum.

**2)** In which specific areas of the cerebrum would the following functional areas typically be found?

**a)** amygdala \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **b)** Broca's area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**c)** gustatory cortex \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **d)** primary sensory area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**a)** Wernicke’s area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **b)** primary motor area \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3)** **Fill-in:** Complete the statements using the most appropriate word or words.

**1.** The nuclei of origin for cranial nerves IX, X, XI, and XII are found in the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**2.** The portion of the brain containing the cerebral peduncles is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**3.** Cranial nerves V, VI, VII, and VIII have their nuclei of origin in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**4.** A shallow groove on the surface of the cerebral cortex is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**5.** Together, the thalamus, hypothalamus and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ constitute the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Exercise 2.** The Cranial Nerves: **1)** Match the cranial nerves in Column A with the statements in Column B. Also, list the number or name (whichever is missing) next to the nerve and whether it is sensory (**S**), motor (**M**) or both (**B**) (mixed).

**Column A**

**A.** Oculomotor -

**B.** Trigeminal -

**C.** Vestibulocochlear -

**D.** Cranial N. I -

**E.** Vagus -

**F.** Cranial N. II -

**G.** Abducens -

**H.** Accessory -

**I.** Cranial N. XII -

**J.** Glossopharyngeal -

**K.** Trochlear -

**L.** Facial -

**Column B**

1. \_\_\_ is responsible for taste sensation on the posterior third of tongue.

2. \_\_\_ acts to decrease heart rate and plays a role in gastric motility.

3. \_\_\_ controls an intrinsic eye muscle that rotates the eye laterally.

4. \_\_\_ concerned with balance and equilibrium and damage can lead to nausea, dizziness.

5. \_\_\_ if damaged, the levator palpebrae is affected and ptosis (drooping upper eyelid) can result.

6. \_\_\_ inflammation of this nerve can result in a painless paralysis of facial muscles called Bell’s palsy.

7. \_\_\_ innervates the sternocleidomastoid and controls voluntary swallowing.

8. \_\_\_ is responsible for the inferior lateral rotation of the eye.

9. \_\_\_ the largest of its three branches is the mandibular branch and controls the muscle of mastication.

10. \_\_\_ nerve fibers travel through the ethmoid bone and damaged can lead to anosmia.

11. \_\_\_ controls food manipulation and also for tongue movements involved in speech and swallowing.

12. \_\_\_ damage to this nerve can lead to defects called anopsia.

**2)** **Label:** Find, label and number all **12 cranial nerves** in the drawing below.



**3) Multiple Choice Questions** – select the best answer.

**1.** The vital centers for heartbeat, respiration, and blood vessel diameter regulation are found in the

**a)** pons  **b)** cerebrum  **c)** cerebellum  **d)** medulla oblongata **e)** midbrain

**2.** Reflex centers for movements of the head and trunk in response to auditory stimuli are located in the

**a)** inferior colliculi

**b)** medial geniculate nucleus

**c)** superior colliculi

**d)** ventral posterior nucleus

**e)** hypothalamus

**3.** Which of these thalamic nuclei relays sensory impulses for vision to the occipital lobe?

**a)** ventral inferior

**b)** ventral posterior

**c)** lateral geniculate

**d)** ventral anterior

**e)** medial geniculate

**4.** Integration of the autonomic nervous system (ANS), control of body temperature and the regulation of eating and drinking are functions of the

**a)** pons

**b)** thalamus

**c)** cerebrum

**d)** hypothalamus

**e)** cerebellum

**5.** The left and right cerebral hemispheres are separated from each other by the

**a)** central sulcus

**b)** transverse fissure

**c)** falx cerebelli

**d)** insula

**e)** longitudinal fissure



**4) Label:** List the name of the specific structure at each point (at right).

**Table 1.** For each of the following structures below, provide the location (brain region, e.g., the diencephalon) and the general function and significance of the structure.

|  |  |  |
| --- | --- | --- |
| **Structure** | **Location** | **Function** |
| Hypothalamus  |  |  |
| Optic chiasm |  |  |
| Hypophysis |  |  |
| Cingulate gyrus |  |  |
| Corpus callosum |  |  |
| Medullary respiratory center |  |  |
| Intermediate mass |  |  |
| Lateral and Median apertures |  |  |
| Primary sensory cortex |  |  |
| Arbor vitae |  |  |
| Cerebral aqueduct |  |  |
| Pineal gland or body |  |  |
| Pia mater |  |  |
| Olfactory cortex |  |  |
| Corpora quadrigeminaSuperior colliculi -Inferior colliculi - |  |  |