

Name: \_\_\_\_\_

## Physiology: Neurotransmitters and the Brain Worksheet

Directions: Write in and circle best answer on this sheet.

1. ACh has 2 types of receptors. They are: \_\_\_\_\_ and \_\_\_\_\_.
2. Where is ACh released, tick all that apply:      Central NS ☐    Peripheral NS ☐    At Skeletal Muscle ☐
3. List Amino Acids that are neurotransmitters (NT's). Also, list NT's that are *derived* from Amino Acids.
4. In general, how do the '**analgesic**' neurotransmitters work in the CNS?
5. List the activities or conditions that could induce the release of **beta endorphins** in the body?
6. List three (3) NT'S discussed in class that are **catecholamines**.  
1) \_\_\_\_\_ 2) \_\_\_\_\_ 3) \_\_\_\_\_
7. What is **catechol-O-methyltransferase**, and what does it do in the body?
8. What is **monoamine oxidase (MAO)** and what does it do in the body?
9. List the major divisions of the brain from the "lowest" to the "highest" in terms of info processing:  
1) \_\_\_\_\_ 4) \_\_\_\_\_  
2) \_\_\_\_\_ 5) \_\_\_\_\_  
3) \_\_\_\_\_ 6) \_\_\_\_\_
10. The formation of memories, the ability to make predictions, the mechanics of language, complex thought and analysis, all are primarily due to this specific region (lobe) of brain \_\_\_\_\_.
11. What is the name of the most superficial part of the **telencephalon's** surface? It is the structure that processes information for each of the lobes. (*Hint: Look it up if you do not recognize a term or word*)  
Answer: \_\_\_\_\_.
12. In which two specific areas (include the lobes) does the perception of **gustation** occur?  
1) \_\_\_\_\_, of the \_\_\_\_\_ lobe.  
2) \_\_\_\_\_, of the \_\_\_\_\_ lobe.

13. The **amygdala** is part of the \_\_\_\_\_ system. An important role of the amygdala is recognition of facial expressions that elicit \_\_\_\_\_, but also more pleasant emotions. Stimulation of the body by the amygdala results in the release of at least 4 NT's (see page 180 of OER text), including:

14. Cranial nerves (like the trochlear, or trigeminal nerves) belong to what aspect of the nervous system?

- a) Spinal nervous system
- b) Peripheral nervous system
- c) Central nervous system

15. If the \_\_\_\_\_ of the brain were damaged, a person could have problems maintaining proper blood pressure levels, may have trouble swallowing and sneezing.

16. List the 3 **vital centers** in the brain. What are their specific functions, and where they are in the brain?

- 1)
- 2)
- 3)

17. The **midbrain** includes a structure that has "4 bodies", called the \_\_\_\_\_.

18. The upper two bodies in Q 17 are the \_\_\_\_\_ & are for \_\_\_\_\_.

19. The bottom two bodies in Q17 are the \_\_\_\_\_ & are for \_\_\_\_\_.

20. Using the OER text (Ch 9, from p200-203), briefly describe the functions of the following **nuclei** that are located in the Hypothalamus. *Specific details of nuclei are not asked on exams, this is just to illustrate the functions of these areas.*

1) Mammillary body:

2) Suprachiasmatic nucleus:

3) Arcuate nucleus:

4) Ventromedial nucleus:

5) Lateral nucleus: