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. What is MAO? Where is it found and what does it do?

3. What are the Amino Acids 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 types of conditions that could induce the release of **beta endorphins** in the body?

6. Which of the following statements about catecholamines is false? *(Hint: Look it up if you've never heard of it.)*
a) they include epinephrine, norepinephrine and dopamine
b) their effects are increased by action of the enzyme catechol-O-methyltransferase
c) they are inactivated by monoamine oxidase
d) they are inactivated by re-uptake into the presynaptic
e) they may stimulate the production of cAMP in the postsynaptic membrane

7. List the major divisions of the brain from the "lowest" to the "highest" in terms of info processing:

1) 4)
2) 5)
3) 6)

8. This structure receives incoming sensory information and then **relays** it to the proper specific part of higher brain centers for further processing. It is the: _____

9. The general region of the brain possesses the somatosensory cortex is the: _____

10. I were making a grand entrance into a room and lost my footing and started to fall, which part of my brain would step in and re-establish my balance for me? _____

11. Briefly explain how the above region of the brain 'knows' how to re-establish balance?

12. The formation of memories, the ability to make predictions, the mechanics of language, complex thought and analysis is primarily due to which specific region of the brain? _____.

13. If someone wants to initiate voluntary body movement, the sequence would be this:

a) Firstly, the _____ is where the signal starts from.

b) This signal then goes to the _____ _____, which is deep in the cerebrum.

c) One region is call the _____ _____ and this has dopaminergic neurons.

d) This area then signals the _____, known as 'the great relay station'.

e) The signal then comes back to the _____, where it can send commands down to the _____ to carry out the body action.

14. Cranial nerves (like 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. What is the name of the most superficial part of the telencephalon's surface, the structure that processes information for each of the lobes? *(Hint: look it up if you do not recognize it)*

Ans: _____.

16. If this portion of the brain were damaged, you might have problems maintaining proper blood pressure levels and may have trouble swallowing. It would be the: _____.

17. Where is the specific location for processing the perceptions of gustation: _____.

18. What does a **Lateralization of the cerebral hemisphere** mean? Explain with an example from class.

19. List the 3 *vital centers* in the CNS? What is their function and where they are located in the brain.

1)

2)

3)

20. Using your notes, briefly describe the functions of the following **nuclei** in the Hypothalamus. The details of each nuclei are not going to be asked on exams, this just illustrates the functions of these areas.

1) Mammillary body:

2) Suprachiasmatic

3) Lateral hypothalamic area:

4) Ventromedial nucleus:

5) a) Preoptic and **b)** Anterior hypothalamic nuclei: