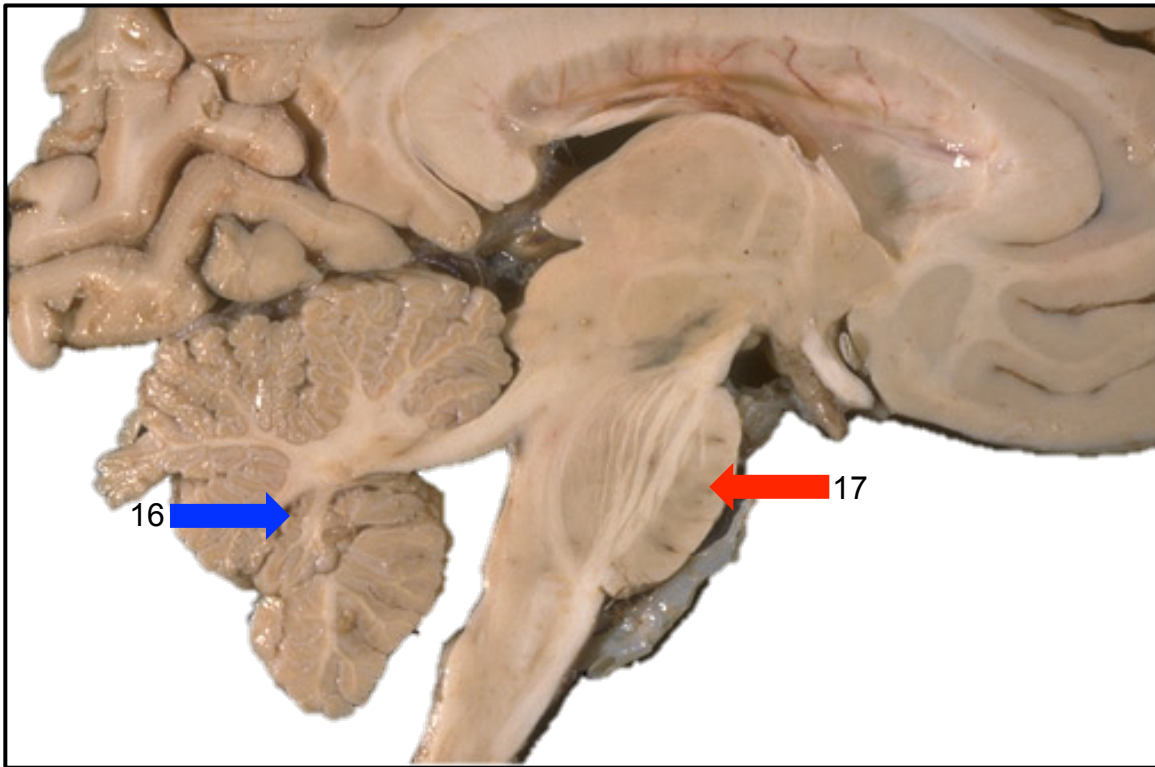


2014 Alabama Brain Bee Mock Exam Answers

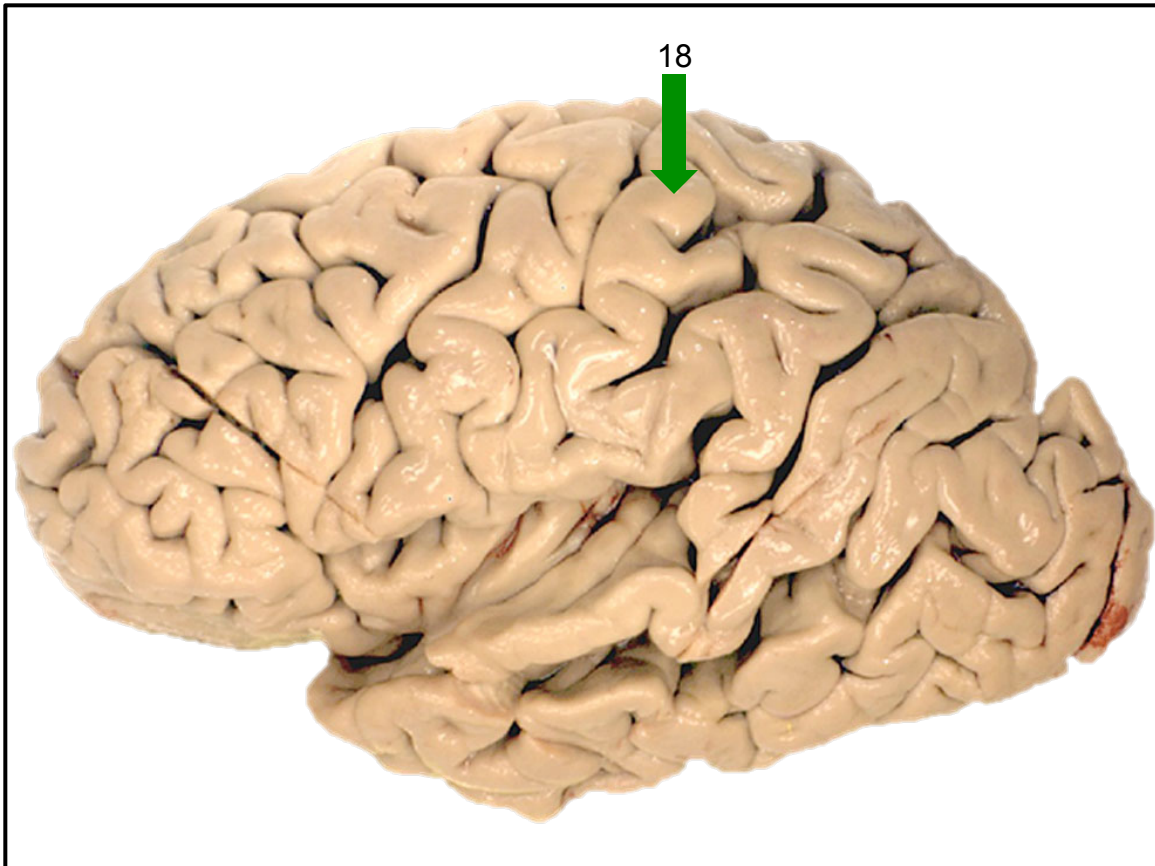
General

1. Name the cranial nerve that carries information about smell to the brain.
 - a. Olfactory Nerve
2. The biologic clock is located in what part of the brain?
 - a. Hypothalamus
3. Name the peptide that accumulates in the senile plaques of brains of Alzheimer's patients?
 - a. Beta Amyloid
4. Name a cognitive disorder associated with chronic alcoholism.
 - a. Korsakoff's Syndrome
5. Down's syndrome occurs when there's an extra of which chromosome?
 - a. 21
6. The striate cortex processes what kind of sensory information?
 - a. Vision
7. Wernicke's area is important for what brain function?
 - a. Language Comprehension
8. Cells that myelinate the peripheral nervous system is called?
 - a. Schwann Cells
9. Which of the following lobes of the cortex is responsible for visual information?
 - a. Occipital Lobe
10. Dopamine and epinephrine belong to what category of neurotransmitters?
 - a. Monoamines
11. Name the primary neurotransmitter by which motor neurons control voluntary muscles.
 - a. Acetylcholine
12. The popular medication fluoxetine, or Prozac, blocks the inactivation of what chemical?
 - a. Serotonin
13. What part of the hindbrain is important for precise timing of muscle movements?
 - a. Cerebellum
14. The main focus of action for cortisol is the metabolism of what substance?
 - a. Glucose
15. What nerve extends from the cochlea to the brain?
 - a. Auditory Nerve

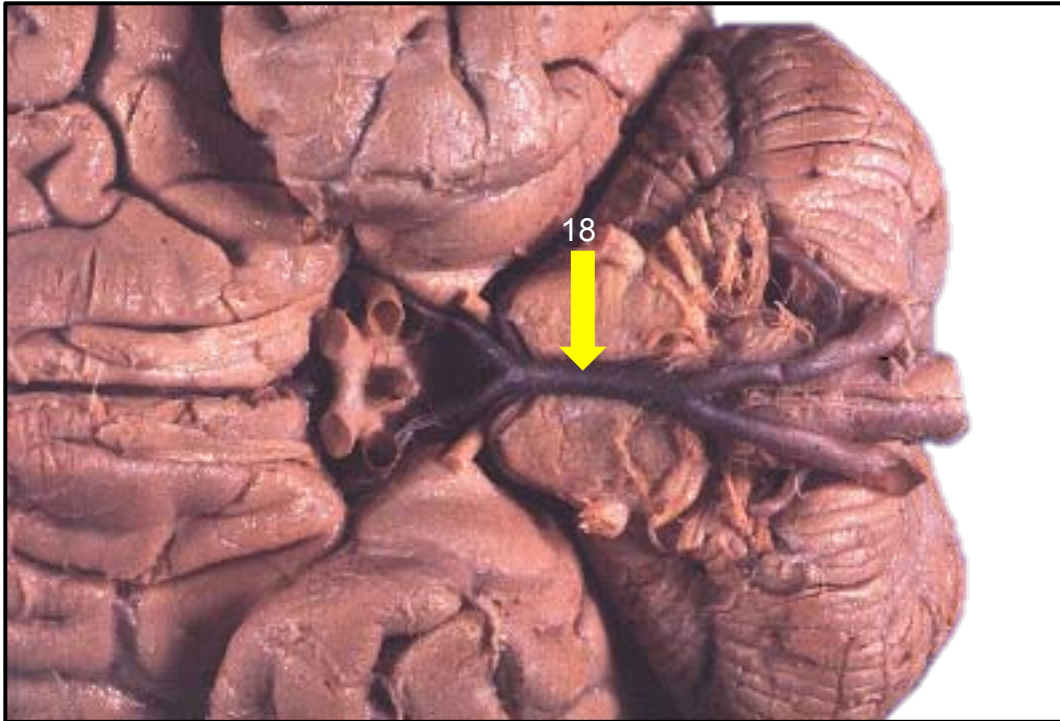
Human Neuroanatomy



16. Which general structure is indicated by the blue arrow above?
- a. Cerebellum
17. Which structure is indicated by the red arrow above?
- a. Pons

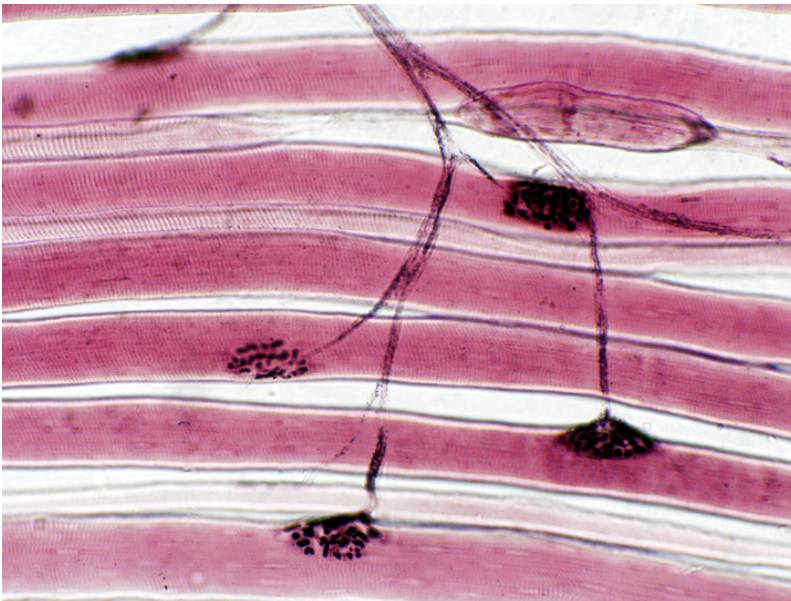


18. Which gyrus or sulcus is indicated by the green arrow above?
- a. Postcentral Gyrus
19. The above gyrus or sulcus is the location of which of the following?
- a. Primary Somatosensory Cortex

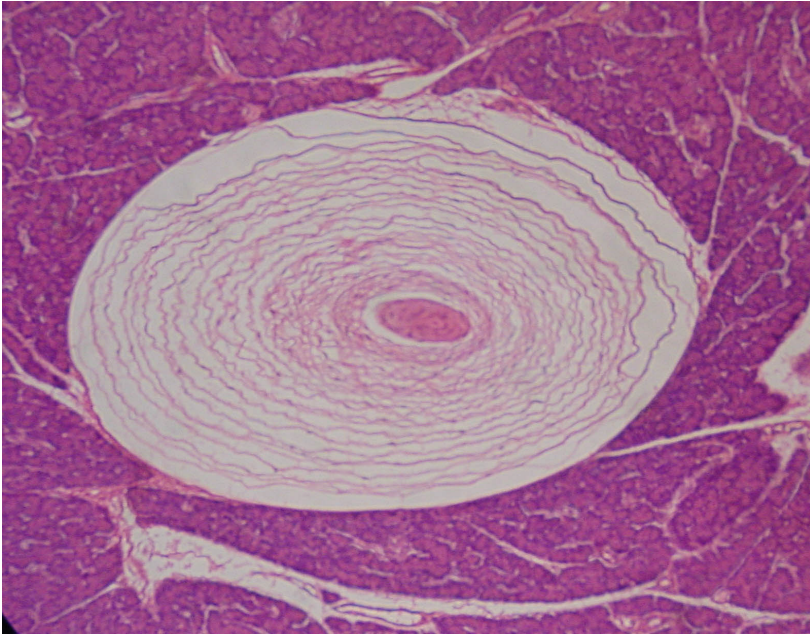


20. Which major artery is indicated by the yellow arrow above?
- a. Basilar Artery

Neurohistology



21. Which structure of the nervous system is illustrated above?
- a. Neuromuscular Junction



22. Which structure of the nervous system is illustrated above?
- Pacinian Corpuscle

Patient Diagnosis

23. Martha, a 73 year-old woman was brought to neurological evaluation by her son because of a three year history of memory impairment. The son had begun to notice gradually worsening memory impairment and difficulty finding words, but the patient became angry at the suggestion that she may have a progressive impairment. On formal testing, she scored well below average in all cognitive domains. PET imaging with Pittsburgh Compound B revealed accumulation of beta amyloid. Which disease or disorder might Martha have?
- Alzheimer's Disease
24. Jackson, a 67 year-old man has an eight year history of involuntary movements. He has brief muscle twitches that developed shortly after a fall. More recently, he has developed slight muscle rigidity and has a disturbed gait. Medical imaging showed some signs of atrophy, yet these may be due to aging. Genetic testing revealed 47 CAG repeats on chromosome 4. Which disease or disorder might Jackson have?
- Huntington's Disease