Practice Questions For Exam 2

1. A 45 year-old woman was brought to the ED after being found collapsed on the floor by her daughter. When the woman was examined, her deficits included weakness of the left upper and lower limb with increased tone and increased deep tendon reflexes. Her left upper limb was held in a flexed position and her left lower limb was extended. This condition is an example of:
   A. decerebrate rigidity
   B. spasticity
   C. hypotonia
   D. lead pipe rigidity
   E. clonus

2. In the above case, further examination revealed a decreased nasolabial fold and drooping mouth on the left although she blinked both eyes and raised both eye brows normally. Tactile and pin prick sensation were normal and no other symptoms were observed. The most likely location of the lesion would be:
   A. cortex
   B. internal capsule
   C. midbrain
   D. rostral medulla
   E. caudal medulla

3. An 80 year-old woman presents with a right homonymous hemianopia with macular sparing. The vessel most likely to cause this deficit is:
   A. posterior cerebral artery
   B. middle cerebral artery
   C. anterior cerebral artery
   D. anterior choroidal artery
   E. superior cerebellar artery

4. A 50 year-old woman sees her physician with symptoms of headache, hearing loss on the left side, tinnitus, unsteadiness, and nausea. The most likely cause for these symptoms is:
   A. circumscribed astrocytoma
   B. medulloblastoma
   C. oligodendroglioma
   D. schwannoma
   E. ependymoma

5. Which other deficit could the above woman also have:
   A. weakness on one side of body
   B. weakness of tongue muscles on one side
   C. loss of smell
   D. visual field deficit
   E. weakness of facial muscles on one side
6. A patient presents with dilated right pupil and difficulty moving the right eye medially. These symptoms could be caused by an aneurysm of the:
   A. middle cerebral artery
   B. AICA
   C. superior cerebellar artery
   D. anterior cerebral artery
   E. vertebral artery

7. A 29 year-old man who collapsed while jogging was brought to the ED unconscious. A CT indicates a ruptured aneurysm was the cause of the man’s condition. Which of the following would be associated most closely with this condition?
   A. epidural hematoma
   B. subdural hematoma
   C. subarachnoid hemorrhage
   D. Charcot-Bouchard aneurysm
   E. milliary aneurysm

8. A 50 year-old obese, hypertensive man is brought to the ED after a sudden onset weakness on the left side of his body including both limbs. A CT shows an infarct in the medulla. Which of the following structures would cause this condition?
   A. lateral vestibulospinal tract
   B. reticulospinal tract
   C. rubrospinal tract
   D. corticospinal tract
   E. corticobulbar tract

9. A 38 year-old man sees his physician because he has had trouble chewing. Examination reveals weakness of masticatory muscles on the right side and a CT image shows a small tumor in a related CNS area. Which other symptom is this man likely to have?
   A. weakness of the right arm
   B. loss of balance, nausea, and nystagmus
   C. loss of pain sensation from the right face
   D. weakness of the lower face on the right
   E. loss of tactile sensation from the right face

10. A 60 year-old woman sees her physician because she has had trouble walking. During evaluation, the woman stumbled and fell towards the left frequently. Her arm movements were accurate and without tremor. An MRI showed an infarct in the brainstem. Which of the following structures could be responsible for this condition?
    A. left lateral vestibulospinal tract
    B. left corticospinal tract
    C. left cerebellar hemisphere
    D. right reticulospinal tract
    E. right corticobulbar tract
11. A 63 year-old patient is seen in a clinic with the following symptoms: a resting tremor in the left hand, a slow shuffling gait, difficulty arising from a chair when seated. These symptoms could be caused by a lesion in the:
   A. left subthalamic nucleus
   B. left cerebellar hemisphere
   C. right corticospinal tract
   D. left substantia nigra
   E. right substantia nigra

12. You ask a friend to help in a demonstration in which he lifts a box off a nearby table. He does not know how much the box weighs. As he reaches out to lift the box with both hands, his ability to use the correct amount of force for this action requires which of the structures below:
   A. premotor cortex
   B. substantia nigra
   C. cerebellar hemisphere
   D. cerebellar vermis
   E. flocculus and nodulus

13. The pathology specimen (myelin stain) in the figure was obtained from a 35 year old woman who died from a neurodegenerative disease. Which symptom would she have displayed as a result of the lesioned areas indicated in the figure?
   A. ataxia
   B. suspended sensory loss for pain
   C. spontaneous tremor
   D. choreiform movements
   E. muscle atrophy
14. A 20 year-old man sees his physician because he has had trouble hearing. He also says he hears a ringing sound in both ears most of the time. On exam he loses his balance easily and hearing loss is evident in both ears. An MRI taken several days later is shown. Examination also reveals several small menigiomas at various locations. The condition this man has is known as:
   A. tuberous sclerosis
   B. Von Hippel-Lindau Disease
   C. Sturge Weber Disease
   D. NF-1
   E. NF-2

15. After his wife had a stroke, a husband noticed that his wife's hair was always tangled and uncombed on the left side of her head, although on the right her hair was straightened and orderly. The left side of her face was usually dirty from food remaining there, but the right face was always clean. She stopped putting her ring and watch on her left hand. When eating, she never used her fork on the left side of her plate and, surprisingly, she often asked why she was not given a fork to eat with. This woman's stroke most likely damaged the:
   A. parietal lobe
   B. temporal lobe
   C. occipital lobe
   D. premotor cortex of frontal lobe
   E. orbitomedial cortex of frontal lobe

16. A 50 year old man who had a history of long term alcohol abuse was seen in a clinic for his unsteadiness. The ataxia gait displayed by this man when he was asked to walk is caused by damage to:
   A. flocculus and nodulus
   B. subthalamic nucleus
   C. cerebellar vermis
   D. vestibular nuclei
   E. spinal motoneurons

17. A patient arrives in the ED with symptoms of a stroke. His symptoms subside with time but an MRI the next day revealed an infarct affecting the structure in the figure. Branches of which vessel supply the indicated structure:
   A. anterior choroidal artery
   B. middle cerebral artery
   C. posterior cerebral artery
   D. internal carotid artery
   E. basilar artery
18. A patient who has not been sleeping well presents to your sleep clinic. During a sleep trial you notice that the patient has multiple hypnic myoclonic episodes, which disrupts the patients sleep. This patient is experiencing difficulty during which sleep stage:
   A. stage 1
   B. stage 2
   C. stage 3
   D. REM

19. An infant is born with a red mark on its face described as a port wine stain over her left eyelid and forehead. At 3 months of age, she develops seizures and her further cognitive development is slow. An MRI shown here indicates the reason for a homonymous hemianopia that is now evident in the child. The condition shown in the MRI is due to:
   A. epidural hemorrhage
   B. subdural hemorrhage
   C. angiooma of pia mater
   D. subarachnoid hemorrhage
   E. intraparenchymal hemorrhage

20. A 50 year-old woman developed difficulty with eyesight, which was followed months later by difficulties at work. She was easily distracted by things around her, she wasn’t as good multi-tasking, and her problem-solving skills were diminished. An MRI was taken, which showed a large periventricular lesion and several smaller lesions in the white matter. The cognitive deficits in this woman most likely result from lesions involving:
   A. hippocampus
   B. cortex in the frontal lobe
   C. thalamus
   D. basal ganglia
   E. long association bundles

21. A 40 year-old man sees his physician because he says he has been “jumpy” lately. His physician notices that as the man sits in his chair he makes nervous, fidgety movements with his hands, his tongue protrudes and retracts periodically, and his legs jerk as if he is restless. His wife says she has noticed that he has been irritable and keeps to himself most of the time whereas he was very outgoing and easy to get along with previously. This man likely has a disorder that involves
   A. alpha synuclein
   B. inclusions in oligdendrocyes
   C. frataxin
   D. atrophy of the caudate nucleus
   E. Lewy bodies
22. A healthy 58 year-old women suddenly collapses in her home with her body jerking uncontrollably. Her husband rushes over to help her. He tries to ask her what happened but she is unable to respond for several minutes. Eventually she recovers and she is able to answer him. He takes her to the ED where a CT is done as shown here. A biopsy of the abnormal region shown in the CT would likely show:
   A. perivascular pseudorosettes
   B. psammoma bodies
   C. verocay bodies
   D. areas of necrosis with pseudopalisading
   E. chicken-wire vascular pattern

23. When Jack was young he disliked most foods. In fact, the only thing he would eat was Cheerios even when the family ate at a restaurant. Now as an adult Jack eats only tuna fish. Jack’s physician warned him that Jack could be poisoning himself due to heavy metals in the water supply. Which of the following symptoms might Jack exhibit if this situation developed:
   A. spontaneous restless movements
   B. weakness with increased muscle tone
   C. loss of smell sensation
   D. loss of tactile sensation
   E. ataxia

24. A 65 year-old hypertensive woman had a stroke damaging her right motor cortex. Which symptom would this woman be expected to have:
   A. weakness or paralysis of right jaw muscles
   B. weakness or paralysis of left jaw muscles
   C. difficulty closing the right eye
   D. difficulty closing the left eye
   E. none of the above

25. A 66-year-old right-handed woman who is a retired bookkeeper stopped driving 5 years ago because of difficulties with depth perception. Her husband pointed out that she was confused by changes in color or in shadows on the ground and found it difficult to integrate information from complex visual scenes. Shortly thereafter, she noticed that she was experiencing difficulties in focusing and multitasking, forgetfulness, and some nighttime confusion (though without hallucination). On examination, you note simultanagnosia, neglect of the left visual hemifield, and sensory neglect on the left side. The patient scored 25/30 on the MMSE. As illustrated by the drawing, she has significant impairment of visuospatial functioning. Where is this neurodegenerative process most likely to have started?
A. Left parieto-occipital cortex, involving especially the dorsal visual stream
B. Left parieto-occipital cortex, involving especially the ventral visual stream
C. Right parieto-occipital cortex, involving especially the dorsal visual stream
D. Right parieto-occipital cortex, involving especially the ventral visual stream

26. A 58-year-old male office manager was brought to the clinic by his wife. Six years ago, he began to believe, without any conclusive evidence, that his wife was cheating on him. The couple went into marriage counseling, but without much success. One year ago, he started to think that one of his coworkers was stealing money from him. He confronted the coworker over and over, appearing increasingly aggressive and agitated. Six months ago, the patient was fired from his job because of lack of restraint in his social behavior with staff. His wife stated that more recently her husband was depressed most of the time. His MMSE score was 22. After examining a recent CT (figure), his physician most likely made a diagnosis of:
   A. dementia with lewy bodies
   B. frontotemporal dementia
   C. alzheimer’s disease
   D. chronic traumatic encephalopathy

| 15. A | 22. B |
| 17. B | 24. E |
| 18. A | 25. C |
| 20. E |