Part I. Clinical Applications and Short Essay

1. Following a train accident, a man with an obvious head injury was observed stumbling about the scene. An inability to walk properly and loss of balance were quite obvious. What brain region was injured?

   Cerebellum

2. An elderly woman is admitted to the hospital to have a gallbladder operation. While she is being cared for, the nurse notices that she has trouble initiating movement and has a strange tremor of her hands. What is a possible diagnosis and what areas of her brain are likely involved?

   Parkinson’s disease; Areas of the brain affected would be the substantia nigra of the midbrain and the basal nuclei of the cerebrum

3. A child is brought to the hospital with a high temperature. The doctor states that the child’s meninges are inflamed. What name is given to this condition?

   Meningitis

4. An elderly man has just suffered a stroke. He is able to understand verbal and written language, but when he tries to respond, his words are garbled. What cortical region has been damaged by the stroke?

   Broca’s area

5. A 28-year old man is brought to the emergency room after suffering a terrible fall from the roof of his house. The doctor records his brain waves to try to determine the area of the brain affected. The man is awake but not responsive. The brain waves indicate severe brain damage. What is this procedure called that measures the brain waves and then indicate the type of brain wave pattern that would be indicative of severe brain damage?

   Electroencephalography and is a procedure that produces an electroencephalogram (EEG) which is the record the electrical currents of the brain. A Delta wave pattern (1-5 cycles/second) in an awake adult indicates brain damage.
Part II
1. cerebral hemispheres
2. brain stem
3. cerebellum
4. ventricles
5. cerebrospinal fluid
Cerebral hemispheres, cerebellum, diencephalon
6. gyrus
7. surface area
8. neuron cell bodies and unmyelinated fibers (axons and dendrites)
9. myelinated fibers
10. basal nuclei

Part III
1. cerebellum
2. medulla oblongata
3. hypothalamus
4. memories
5. temporal
6. Broca’s area
7. reasoning
8. frontal
9. central; peripheral
10. cerebrospinal fluid (CSF); subarachnoid; L3 to L5; Because the solid portion of the spinal cord ends at a higher level (about L2) so it is not likely to be injured, and the cauda equine nerves are similar to cooked pasta noodles in a bowel of water (CSF) in that a needle inserted into the area is not likely to puncture a single nerve (noodle).

11. Broca’s; left 17. pons 23. pons
12. form; nonfluent 18. medulla oblongata 24. hypothalamus
13. Wernicke’s 19. hypothalamus 25. midbrain
14. Hypothalamus 20. thalamus 26. hypothalamus and
15. midbrain 21. medulla oblongata 21. medulla oblongata pineal gland
16. midbrain 22. hypothalamus

Part IV
1. cerebrum 18. O 35. C
4. cerebrospinal fluid 21. L 38. D
5. choroid plexus 22. N 39. C
6. shunt 23. B 40. B
7. spinal cord 24. D 41. A
8. white matter 25. B 42. D
10. diencephalon 27. B 44. C
11. hypothalamus 28. C 45. A
13. frontal lobe 30. D 47. B
14. theta waves 31. C 48. A
15. M 32. C 49. A
16. P 33. A
17. I 34. B