Please choose the best answer.

1. An 81 year-old right-handed woman with a history of hypertension was brought to the emergency room. She was unable to communicate properly, speaking with words and sentences that did not make any sense. Which of the following is not an appropriate consideration for her problem?
   a. left posterior superior temporal lobe
   b. Broca’s aphasia
   c. Wernicke’s aphasia
   d. middle cerebral artery

2. The hypothalamus participates in a variety of neural and non-neural systems that regulate homeostasis (stability of internal environment). Which is not correct? Homeostatic control of:
   a. appetite
   b. thermoregulation
   c. sleep-wake cycles
   d. auditory acuity

3. The striatum includes the
   a. globus pallidus and putamen
   b. caudate and putamen
   c. subthalamus and putamen
   d. subthalamic nucleus and substantia nigra

4. Inputs from the substantia nigra (pars compacta) enter the basal ganglia via the
   a. lentiform nucleus
   b. subthalamic nucleus
   c. striatum
   d. globus pallidus
5. Which is not correct about the inferior olivary nucleus?
   a. receives fibers from the cerebral cortex
   b. sends fibers to the cerebellum via the brachium conjunctivum
   c. receives fibers from the red nucleus
   d. gives rise to excitatory climbing fibers to the Purkinje dendrites

6. Which is correct about the superior olivary nucleus?
   a. sends fibers via the inferior cerebellar peduncle (restiform body)
   b. receives input from the cerebral cortex
   c. sends fibers to the inferior colliculus
   d. sends fibers to the superior colliculus

7. The olivocochlear bundle extends from the superior olivary nucleus to the
   a. organ of Corti
   b. retina
   c. inferior colliculus
   d. vestibular nerve

8. All the components of the trigeminal nerve enter and exit the brain stem at the level of the
   a. cerebral peduncles
   b. pons
   c. pyramids
   d. inferior cerebellar peduncles

9. Which is incorrect about the motor V cranial nerve?
   a. passes through the Gasserian ganglion to the mandibular division of the 5th cranial nerve
   b. originates from the motor nucleus of V medial to main sensory V
   c. supplies input to the trapezius and temporalis muscles
   d. is caudal to the mesencephalic V.

10. A lesion in spinal V (trigeminal) nucleus and tract causes loss of
    a. proprioception in the face
    b. pain and temperature in the shoulder
    c. general sensory to the face
    d. pain and temperature to the face, oral and nasal cavities
11. An upper motor neuron lesion to the motor nucleus of the VII nerve causes:
   a. facial weakness in the lower half of the face
   b. paralysis in both the upper and lower half of the face
   c. lack of pain sensation in the lower half of the face
   d. lack of pain and temperature sensation on upper half of face.

12. Which answer is not associated with the lacrimal (tear) gland?
   a. glossopharyngeal nerve
   b. facial nerve
   c. pterygopalatine ganglion
   d. superior salivatory nucleus

13. How do you test to learn if the nucleus ambiguus is intact?
   a. place something sweet on the tongue
   b. ask individual to protrude the tongue
   c. ask individual to shrug the shoulders
   d. ask individual to swallow

14. The preganglionic fiber of the parasympathetic nerve accompanying the III cranial nerve is destined for the
    a. submaxillary gland
    b. ciliary ganglion whose postganglionic fiber goes to the olfactory cilia
    c. ciliary ganglion whose postganglionic fiber goes to the iris of the eye
    d. lacrimal gland to cause tearing when sad

15. A large astrocytoma multiforma tumor in the cerebellum over the IV ventricle could not easily encroach upon which nuclei
    a. dorsal motor X
    b. nucleus tractus solitarius
    c. vestibular nuclei
    d. inferior olivary nuclei

16. Parasympathetic fibers are not found in the
    a. iris
    b. parotid gland
    c. upper and lower limbs
    d. thoracic viscera
17. Ganglia in the sympathetic division of the autonomic nervous system do not include the:
   a. prevertebral ganglia
   b. paravertebral ganglia
   c. otic ganglia
   d. terminal ganglia

18. Temperature visceroreceptors are not found in the:
   a. esophagus
   b. small intestine
   c. colon
   d. rectum

19. The postganglionic nerve cells receiving input from the dorsal motor nucleus of X forming part of the vagus nerve are found in the:
   a. superior salivatory nucleus
   b. nucleus solitarius
   c. walls of the abdominal viscera
   d. dorsal root ganglia

20. The two superior cervical ganglia are near C2-C3 segments of the spinal cord and consist of the fusion of ___ ganglia.
   a. C1-C4
   b. C2-C3
   c. C4-C6
   d. C5-C8

21. All presynaptic endings in the ANS/VNS are
   a. Gabaergic
   b. Cholinergic
   c. Adrenergic
   d. Dopaminergic

22. All postsynaptic endings in the parasympathetic division of the ANS/VNS are
   a. Cholinergic
   b. Adrenergic
   c. Gabaergic
   d. Dopaminergic

23. The white ramus communicans consists of the ____ of the sympathetic div. of the ANS:
   a. post ganglionic fibers
   b. preganglionic fibers
   c. interneurons in the lateral horn of the spinal cord
   d. none of the above
24. Which cells are not associated directly or indirectly with the anterior commissure?
   a. anterior olfactory nucleus
   b. granule cells in the olfactory bulb
   c. mitral cells
   d. Purkinje cells

25. The synapses between granule cells and mitral and tufted cells are:
   a. axoaxodendritic
   b. axosomatic
   c. dendrodendritic
   d. axosomatic

26. The medial olfactory stria goes to the septal area where it does not send information to:
   a. hippocampus
   b. medial forebrain bundle
   c. suprachiasmatic nucleus
   d. fornix

27. Which structure is not part of the olfactory cortex?
   a. periamygdaloid area
   b. hippocampus
   c. prepiriform cortex
   d. parahippocampal gyrus

28. The lateral olfactory stria does not go directly to:
   a. septal area
   b. amygdala
   c. prepiriform cortex
   d. periamygdaloid area

29. Which cranial nerves originate from the midbrain?
   a. facial/auditory
   b. olfactory/visual
   c. oculomotor/oculomotor
   d. trigeminal/abducens

30. What function is not associated with the nucleus solitarius?
   a. taste in the anterior 2/3 of the tongue
   b. sensory input from thoracic viscera
   c. sensory input from the abdominal viscera
   d. peristalsis (rhythmic contraction of viscera smooth muscle)
31. The cerebellopontine angle is an important neurological landmark in the brain because
a. the VII and VIII cranial nerves enter and exit here
b. only the VII cranial nerve exits here
c. only the VIII cranial nerve enters here
d. the dorsal motor nucleus of X sends fibers to exit here

32. The nucleus of Edinger Westphal sends its axons along with the _____ nerve to cause
the constriction of the pupil.
   a. IV
   b. V
   c. VI
   d. III

33. A drooping left eyelid as well as a paralyzed left side of the face indicates both
the _____ and the _____ nerves are not functioning well.
   a. IV/V
   b. III/IV
   c. III/VII
   d. V/VII

34. The suprachiasmatic nucleus sends its fibers via the _____ to reach the lateral horn of
the spinal cord.
   a. medial longitudinal fasciculus
   b. dorsal longitudinal fasciculus
   c. stria medularis
   d. median forebrain bundle

35. The axia terminals from the amygdala enters the hypothalamus to provide:
   a. emotional content to behavior
   b. thirst regulation
   c. appetite regulation
   d. temperature regulation

36. The medial forebrain bundle extending from olfactory tracts to septal nuclei to the
lateral hypothalamic to midbrain tegmentum is concerned with what function?
   a. memory
   b. ovulation
   c. emotional drives related to olfaction
   d. water balance
37. Somatic motor activity is not controlled by which of these structures?  
   a. red nucleus  
   b. substantia nigra  
   c. superior temporal gyrus  
   d. basal ganglia  

38. Fibers from the ______ are severed in a frontal lobotomy to alleviate anxiety.  
   a. ventral lateral nucleus  
   b. ventral medial nucleus  
   c. dorsomedial nucleus  
   d. pulvinar  

39. Which function is not attributed to the prefrontal cortex?  
   a. cautiousness  
   b. self-critical  
   c. changing set  
   d. coordinated speech  

40. The right side of the ______ is responsible for the neglect syndrome on the left side of the body or environment.  
   a. supramarginal gyrus, area 40, end of lateral fissure  
   b. angular gyrus, area 39, end of superior temporal sulcus  
   c. superior parietal, area 7  
   d. inferior temporal gyrus  

41. The cingulum in the cingulate gyrus connects the entorhinal cortex in the parahippocampal gyrus with the ______.  
   a. temporal lobe  
   b. occipital lobe  
   c. parietal and frontal lobes  
   d. insula  

42. The inferior longitudinal fasciculus connects the orbital frontal cortex with the ______.  
   a. occipital lobe  
   b. insula  
   c. parietal lobe  
   d. septal area
43. The consensual pupillary light reflex is reduced but not eliminated if the _____ is cut.
   a. corpus collosum
   b. habenular commissure
   c. anterior commissure
   d. posterior commissure

44. Projection fibers from the cerebral cortex do not include the
   a. corticospinal tracts
   b. rubrospinal tracts
   c. corticopontine tracts
   d. corticobulbar tracts

45. Cortical axons on their way to the internal capsule pass through the:
   a. cerebral peduncles
   b. pyramids
   c. corona radiata
   d. external capsule

46. The medial preoptic nucleus, posterior to the lamina terminalis, produce _____ hormones.
   a. thyrotrophic hormone
   b. growth hormone
   c. gonadotrophic releasing hormones
   d. ADH (antidiuretic hormone)

47. Oxytocin which means swift birth acts on the smooth muscle of the _____ in the male.
   a. vas deferens
   b. testes
   c. scrotum
   d. penis

48. Axons from the hippocampal pyramidal cells, dealing with memory, and forming the fornix, project to the _____ and the _____.
   a. amygdala and uncus
   b. midbrain and its tegmentum
   c. septal area and the hypothalamus
   d. supraoptic and paraventricular nuclei
49. A 68 year old woman was brought to the emergency room with the following symptoms. Where is the lesion?
Weber’s syndrome:
1. external strabismus of the right eye
2. ptosis of the right eyelid
3. dilated right pupil (light reflex abolished in the right eye)
4. loss of the accommodation-convergence reaction in the right eye
5. paresis (partial paralysis) in the upper and lower limbs (left side)
6. hyperreflexia of both limbs on the left
7. Babinski sign on left
8. drooping of mouth on left side
   a. level of inferior colliculus on right side of midbrain
   b. level of superior colliculus on left side of midbrain
   c. level of superior colliculus on right side of midbrain
   d. level of pons on right side

The lesion is often caused by an aneurysm in the posterior communicating artery.

50. Which of the following is not involved in the lesion mentioned in 49?
   a. oculomotor nerve III
   b. corticospinal fibers
   c. corticobulbar fibers
   d. trigeminal nerve

THE MIND, ONCE “STRETCHED” BY A NEW IDEA, NEVER REGAINS ITS ORIGINAL DIMENSIONS.