

ANP1106 Midterm 2 – Dr. Carnegie – 2015

-45 multiple choice questions, plus 17 marks for diagram labeling and other written work

1. Neurons can be classified structurally by the number of processes extending from their cell body. Which is the most common neuron type in humans?

- a) tripolar
- b) bipolar
- c) unipolar
- d) all neurons have the same number of processes
- e) multipolar

2. To produce horizontal wrinkles in the forehead, which of the following muscles is involved?

- a) medial pterygoid
- b) zygomaticus
- c) frontalis
- d) temporalis

3. In flexing the forearm at the elbow, the:

- a) biceps brachii and brachialis act as prime movers
- b) triceps brachii acts as antagonist
- c) brachioradialis acts as antagonist
- d) a) and b)

4. Which of the following is NOT associated with the deltoid muscle?

- a) prime mover of arm flexion
- b) prime mover of arm abduction
- c) swinging arm movements when walking
- d) common site for IM injection
- e) permits lateral & medial arm rotations if only some fibers used

5. The “smiling” muscle is the:

- a) orbicularis oris
- b) mentalis
- c) zygomaticus
- d) buccinator
- e) none of the above

6. The pectoralis major muscle:

- a) abducts the humerus
- b) adducts the humerus
- c) retracts the scapula
- d) protracts the scapula
- e) rotates the radius

7. A nursing infant develops a powerful sucking muscle that adults also use for whistling called the:

- a) platysma
- b) masseter

- c) zygomaticus
- d) buccinator

8. When the term biceps, triceps or quadriceps forms part of a muscle's name, you can assume that:

- a) the muscle has two, three, or four origins, respectively
- b) the muscle is able to change direction twice, three times, or four times faster than other muscles, respectively
- c) the muscle has two, three, or four functions, respectively
- d) the muscle has two, three, or four insertions, respectively
- e) the muscle is composed of two, three or four fascicles, respectively

9. Which of the following muscles would NOT influence lip movement?

- a) zygomaticus
- b) mentalis
- c) orbicularis oculi
- d) buccinator
- e) all of the above would influence lip movement

10. Which of the following is NOT a member of the hamstrings?

- a) gracilis
- b) semitendinosus
- c) semimembranosus
- d) biceps femoris

11. Which of the following muscles is NOT a part of the quadriceps femoris?

- a) rectus femoris
- b) biceps femoris
- c) vastus medialis
- d) vastus lateralis
- e) vastus intermedius

12. The muscles that flex the leg and extend the thigh:

- a) are found in the posterior compartment of the thigh
- b) include the semimembranosus and the semitendinosus
- c) are collectively called the hamstrings
- d) a) and b) are correct
- e) a), b) and c) are correct

13. Which of the following statements is TRUE?

- a) The "bi" in biceps refers to the number of insertions that a muscle has.
- b) The chewing muscle covering the ramus of the mandible is the buccinator.
- c) A prime mover of the arm that acts in adduction would be the deltoid muscle.
- d) The calcaneal tendon is the common instertion tendon for the gastrocnemius and soleus muscles.
- e) During inspiration, the first rib is fixed in place by the splenius muscle.

14. The names of muscles often indicate the action of the muscle. What does the term *levator* mean?

- a) The muscle flexes and rotates a region.
- b) The muscle is a fixator and stabilizes a bone or joint.
- c) The muscle elevates a region.
- d) The muscle functions as a synergist.

15. Tennis players often complain about pain in the arm (forearm) that swings the racquet. What muscle is usually strained under these conditions?

- a) the triceps brachii
- b) the anconeus
- c) the brachioradialis
- d) the flexor digitorum profundus

16. What do genioglossus, hyoglossus, and styloglossus have in common?

- a) All names indicate the relative size of the muscle.
- b) All names reflect direction of muscle fibers.
- c) Each acts synergistically to elevate the jaw.
- d) All act on the tongue.

17. Which of the following is paired correctly?

- a) deltoid muscle // prime mover of arm abduction
- b) erector spinae // prime mover of head flexion
- c) commissural fibers // link areas WITHIN a cerebral hemisphere
- d) adductor magnus muscle // lateral compartment of the thigh
- e) biceps brachii // antagonist during arm flexion

18. Ciliated CNS neuroglia that play an active role in moving the cerebrospinal fluid are:

- a) ependymal cells
- b) Schwann cells
- c) oligodendrocytes
- d) astrocytes
- e) microglia

19. Loss of the ability to perform motor activities such as piano playing, with no paralysis or weakness in specific muscles, might suggest damage to the:

- a) spinal cord
- b) premotor cortex
- c) primary motor cortex
- d) Broca's area

20. The subarachnoid space lies between what two layers of meninges?

- a) arachnoid mater and pia mater
- b) arachnoid mater and dura mater
- c) dura mater and epidural mater
- d) arachnoid mater and epidural mater

21. The hypothalamus:

- a) is the thermostat of the body since it regulates temperature
- b) contains feeding and hunger centres
- c) contains neurons sensitive to the hydration level of the blood
- d) all of the above are correct

22. Problems in balance may follow trauma to which nerve?

- a) abducens
- b) vestibulocochlear
- c) trigeminal
- d) accessory
- e) vagal

23. A patient who has received a blow to the side of the skull is now unable to close his eye and the corner of his mouth droops. Which cranial nerve has been damaged?

- a) facial
- b) glossopharyngeal
- c) hypoglossal
- d) vagus

24. When neurons in Wernicke's area send impulses to neurons in Broca's area, the white matter tracts utilized are:

- a) commissural fibers
- b) projection fibers
- c) association fibers
- d) anterior funiculus fibers

25. The basal nuclei include:

- a) hippocampus
- b) lentiform nucleus
- c) red nucleus
- d) mammillary bodies
- e) b) and c)

26. The primary motor area of the cerebral cortex is located in the:

- a) precentral gyrus
- b) postcentral gyrus
- c) temporal lobe
- d) occipital lobe
- e) insula

27. The fissure separating the left and right cerebral hemispheres is the:

- a) central fissure
- b) longitudinal fissure
- c) parieto-occipital fissure
- d) lateral fissure
- e) none of the above

28. The cerebrospinal fluid:
- a) is secreted by the arachnoid villi
  - b) enters the ventricles after filling and circulating through the subarachnoid space
  - c) is completely renewed about once every 48 hours
  - d) is formed by the choroid plexuses
  - e) c) and d)
29. The abducens nerve regulates the movement of the:
- a) medial rectus muscle
  - b) lateral rectus muscle
  - c) superior rectus muscle
  - d) inferior rectus muscle
30. The \_\_\_\_\_ nerve is NOT a branch of the trigeminal nerve.
- a) ophthalmic
  - b) maxillary
  - c) cervical
  - d) mandibular
31. The cranial nerve with a dual origin (brain and spinal cord) is the:
- a) hypoglossal
  - b) accessory
  - c) vagus
  - d) glossopharyngeal
32. The brainstem includes all of the following EXCEPT the:
- a) medulla oblongata
  - b) pons
  - c) midbrain
  - d) diencephalon
  - e) reticular formation
33. A six-year-old is at the edge of the outfield watching jets take off from a nearby military base instead of paying attention to the softball game in which his older sister is playing. A strongly hit softball strikes him in the back of the head with considerable force. Which association area is most likely to be damaged in this accident?
- a) auditory
  - b) visual
  - c) somatosensory
  - d) posterior language
  - e) common integrative
34. Astrocytes function to:
- a) form myelin in the central nervous system
  - b) form myelin in the peripheral nervous system
  - c) maintain the ionic environment of the central nervous system
  - d) absorb cerebrospinal fluid and return it to the venous system
  - e) form cerebrospinal fluid

35. Which of the following statements is/are TRUE?

- a) The left cerebral hemisphere is usually dominant for language and math.
- b) The primary visual cortex contains a map of visual space.
- c) Brodmann numbers refers to the dimensions of CNS neurons.
- d) Meningitis is the most accurate term for inflammation of neurons.
- e) a) and b)

36. A tumor is growing in the left lateral horns of several segments of a patient's spinal cord. How might these tumors affect the patient?

- a) The patient may not be able to feel somatic sensations from the chest down.
- b) The patient may not be able to move the lower extremities.
- c) The patient may have difficulty regulating cardiac and smooth muscle contractions.
- d) a) and b)

37. Which spinal nerves go directly to the tissues they supply without forming a plexus?

- a) C1 through C4
- b) C4 through T1
- c) T2 through T12
- d) L1 through L5
- e) S1 through S5

38. Which of the following statements regarding spinal nerves is TRUE?

- a) The dorsal ramus carries only sensory information while the ventral ramus carries only motor information.
- b) The dorsal root carries information only toward the spinal cord while the ventral root carries information away from the spinal cord.
- c) The dorsal ramus only carries information toward the posterior compartment of the body while the ventral ramus only carries information toward the anterior compartment of the body.
- d) The dorsal root is equivalent to the dorsal ramus.
- e) The dorsal ramus carries only motor information while the ventral ramus carries only sensory information.

39. The main function of Schwann cells is to:

- a) form the myelin sheaths of neurons in the PNS
- b) form the myelin sheaths of neurons in the CNS
- c) act as part of the blood-brain barrier
- d) act as interneurons
- e) produce cerebrospinal fluid

40. The primary auditory cortex is located in:

- a) the lateral surface of the frontal lobe
- b) the lateral surface of the occipital lobe
- c) the superior surface of the temporal lobe
- d) the inferior surface of the temporal lobe
- e) the postcentral gyrus of the parietal lobe

41. A spinal nerve is covered from the inside out with a:

- a) myelin sheath, endoneurium, perineurium, epineurium
- b) myelin sheath, epineurium, perineurium, endoneurium
- c) myelin sheath, perineurium, epineurium, endoneurium
- d) epineurium, perineurium, endoneurium

42. The sacral plexus is the origin of the:

- a) axillary nerve
- b) obturator nerve
- c) femoral nerve
- d) sciatic nerve
- e) both c) and d)

43. The postcentral gyrus is the:

- a) primary somatosensory area
- b) primary motor area
- c) somatosensory association area
- d) primary auditory area
- e) all of the above

44. As a result of the brain injury suffered by Kevin Chappell in the article I assigned to you to read, Kevin was no longer able to:

- a) link names with faces
- b) recognize people he used to know
- c) recognize objects
- d) draw an object from memory
- e) see

45. All of the following are structures of the limbic system except the \_\_\_\_\_.

- a) hippocampus
- b) cingulate gyrus
- c) amygdaloid nucleus
- d) caudate nucleus

#### Fill in the Blank Answers

Brodmann's # premotor cortex – #4

sciatic nerve branches to the tibial and – common fibular nerve

constricts urethra – urogenital diaphragm

maintains jaw at rest – temporalis

#### Diagrams

- orbicularis oris (lips)
- dura mater (5<sup>th</sup> layer)
- splenius (A & P Flix)
- deltoid, gastrocnemius, brachioradialis
- trochlear (top of eye nerve)
- third ventricle
- external oblique