

University of Ottawa

ANP 1106C: Midterm #2

Date: March 5, 2019
Time: 13:00 h
Duration: 1 hr 20 min

Instructor:
Dr. J. Carnegie

INSTRUCTIONS:

- 40 multiple choice questions (1 mark/1 correct answer each) plus 20 marks for diagram labeling and fill in blank.
- Please use the computer sheet for the multiple choice questions, but answer the remaining questions right on the exam itself.
- Please put your name and student number at the top of this page and on your computer sheet and at the top of pages 7 and 9. Please hand in pages 7-10 and your computer sheet when finished. You can keep pages 1-6; correct answers to multiple choice questions will be posted.
- Make sure this exam is complete. This exam contains 10 pages. The excuse of missing a page will not be accepted after the examination.

1. Which of the following statements is FALSE?
☐ A. The limbic system acts as our emotional brain.
☐ B. The primary visual cortex contains a map of visual space.
☒ C. As with the cerebral cortex, the two sides of the cerebellum communicate with the opposite sides of the body.
☐ D. The hypothalamus houses the thermostat of the body.
☐ E. The visual sensory area of the cerebral cortex is located in the occipital lobe.
2. 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)
3. The basal nuclei include all of the following EXCEPT:
☐ A. globus pallidus
☐ B. putamen
☒ C. amygdala
☐ D. caudate nucleus
☐ E. all answers are part of the basal nuclei
4. Bipolar neurons are commonly:
☐ A. motor neurons
☐ B. called neuroglia
☐ C. found in ganglia
☒ D. found in the retina of the eye
5. Damage to the auditory association area would result in an inability to:
☐ A. hear
☐ B. be aware of the loudness of a sound
☐ C. repeat what one hears
☐ D. hearing with both ears
☒ E. understand what one hears

6. 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
- recognize faces*
visual agnosia *→ seeing*
damage to primary visual cortex
7. The subarachnoid space lies between what two layers of meninges?
- A. arachnoid and epidura
 - ☒ B. arachnoid and pia
 - C. arachnoid and dura
 - D. dura and epidura
- arachnoid and pia*
8. All of the following are structures of the limbic system except the _____.
- A. hippocampus
 - B. cingulate gyrus
 - ☒ C. amygdaloid nucleus
 - D. caudate nucleus
9. 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.
10. The connective tissue membrane that envelopes a fascicle is called the:
- A. endomysium
 - B. epimysium
 - ☒ C. perimysium
 - D. sarcomysium
 - E. none of the above
11. Which of the following would NOT be involved in plantar flexion of the foot?
- A. soleus
 - B. fibularis longus *→ plantar flexion*
 - ☒ C. tibialis anterior *→ dorsiflexion*
 - D. gastrocnemius
12. Which of the following is NOT associated with the deltoid muscle?
- ☒ A. prime mover of arm flexion when all fibers used
 - 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
- abduction*
13. Which of the following muscles inserts via the calcaneal tendon?
- A. semitendinosus
 - B. sartorius
 - C. tibialis anterior *l. anterior*
 - ☒ D. soleus
- gast*
14. Adductor magnus, adductor longus and adductor brevis are parts of a large muscle mass of the:
- A. anterior compartment of the thigh
 - B. posterior compartment of the thigh
 - ☒ C. medial compartment of the thigh
 - D. lateral compartment of the thigh

15. Which of the following muscles would NOT influence lip movement?
- A. zygomaticus *smile*
 - B. mentalis *pout*
 - ☒ C. orbicularis oculi *blink*
 - D. buccinator *pucker*
 - E. all of the above would influence lip movement
16. With regard to muscle fiber arrangement in a pennate muscle: *unipennate, bipennate, multi*
- A. the fascicular pattern is circular
 - B. the fascicles form a triangle
 - ☒ C. the fascicles are short and attach obliquely to a central tendon that runs the length of the muscle *rectus abdominis*
 - D. the long axes of the fascicles run parallel to the long axis of the muscle *deltoid*
 - E. None of the above
17. 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.
18. Which of the choices below is the major muscle for resting level of breathing?
- ☒ A. diaphragm
 - B. rectus abdominis
 - C. latissimus dorsi
 - D. temporalis
19. Which of the following is NOT a function of the sartorius muscle?
- A. lateral rotation of thigh
 - B. flexion of knee
 - ☒ C. adduction of thigh
 - D. flexion of hip
20. Which of the following is the prime mover of head flexion?
- A. scalenes
 - ☒ B. sternocleidomastoid
 - C. splenius
 - D. erector spinae
21. The extensor carpi radialis brevis:
- ☒ A. extends and abducts the wrist and is short
 - B. extends and abducts the wrist and has a small tendon
 - ☒ C. supinates the forearm and is a superficial muscle
 - D. extends the thumb and is a deep muscle
22. Which of the following are small rectangular muscles that spare the shoulders as they act together to pull the scapulae toward mid-line?
- A. levator scapulae
 - ☒ B. rhomboids
 - C. subscapularis
 - ☒ D. trapezius
23. Which of the following contains ONLY motor fibers?
- ☒ A. dorsal root
 - B. dorsal ramus
 - C. ventral root
 - ☒ D. ventral ramus
24. The reason hydrocephalus is so dangerous is that:
- A. too many toxic products flood the brain
 - ☒ B. excess cerebrospinal fluid puts pressure on neurons, damaging them
 - ☒ C. the brain dehydrates
 - D. bacteria can grow more easily in accumulated fluid
 - E. it causes excessive release of hormones from the hypothalamus

25. 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

26. Which nerve fibers link areas WITHIN a cerebral hemisphere?

- ☐ A. projection fibers
 - ☐ B. corpus callosum
 - ☒ C. association fibers
 - ☐ D. commissural fibers
 - ☐ E. none of the above
- association*

27. 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

28. 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

29. The primary visual cortex is located in the:

- ☒ A. occipital lobe
- ☐ B. frontal lobe
- ☐ C. temporal lobe
- ☐ D. parietal lobe
- ☐ E. insular lobe

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

- ☐ A. abducens
 - ☒ B. vestibulocochlear
 - ☐ C. trigeminal
 - ☐ D. accessory
 - ☐ E. vagal
- face*

31. Which of the following would help to determine if the oculomotor nerve (III) was damaged?

- ☐ A. have the patient distinguish between green and red colours
 - ☐ B. have the patient read the letters on an eye chart
 - ☒ C. have the patient look superiorly and inferiorly
 - ☐ D. have the patient cry
- left & right*

32. 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

33. The cerebrospinal fluid:

- ☐ A. is secreted by the arachnoid villi
- ☐ B. enters the four 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)

34. The abducens nerve regulates the movement of the: lateral
- A. medial rectus muscle
 - ☒ B. lateral rectus muscle
 - C. superior rectus muscle
 - D. inferior rectus muscle
35. The cerebellum:
- ☒ A. is located posterior to the brain stem and inferior to the cerebral hemispheres
 - B. directly stimulates voluntary skeletal muscle contractions
 - ☒ C. communicates with the cerebral hemispheres through three pairs of cerebellar peduncles → to brain stem
 - ☒ D. has a superficial layer of white matter grey
 - E. all of the above
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? autonomic
- 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 Sacral
 - ☒ E. S1 through S5
38. The polio virus typically attacks:
- ☒ A. posterior root ganglia
 - ☒ B. neurons in the anterior gray horns of the spinal cord
 - ☒ C. only sensory neurons
 - ☒ D. only interneurons
 - E. the connective tissues surrounding neurons
39. Spinal nerves are considered mixed, which means that:
- A. they contain both nerves and tracts
 - B. they contain both gray and white matter
 - ☒ C. they contain both afferent and efferent nerves
 - ☒ D. they use multiple types of neurotransmitters
 - ☒ E. a single nerve arises from multiple segments of the spinal cord
40. The outermost layer of the meninges is the:
- A. pia mater
 - B. arachnoid mater dura
 - C. choroid plexus arachnoid
 - ☒ D. dura mater pia
 - E. ependyma ependyma