

KEY

INTEGRATIVE BIOLOGY 131  
EXAMINATION II  
November 13, 2002

I. Please choose the best answer:

1. The Eustachian tube opens into the lateral wall of the
  - a. nasal cavity
  - b. nasopharynx
  - c. inner ear
  - d. oropharynx
  
2. Cricoid, epiglottis and thyroid cartilages are found as part of the
  - a. trachea
  - b. nasal cavity
  - c. oropharynx
  - d. larynx
  
3. What serves as both a respiratory and a digestive pathway?
  - a. oropharynx
  - b. nasopharynx
  - c. trachea
  - d. larynx
  
4. What is not a part of the root of the lung?
  - a. pulmonary artery
  - b. bronchi
  - c. cricoid cartilage
  - d. pulmonary vein
  
5. Which of the following is not part of the nasal septum?
  - a. ethmoid
  - b. nasal conchae
  - c. hyaline cartilage
  - d. vomer
  
6. The glottis is
  - a. superior to the epiglottis
  - b. anterior to the larynx
  - c. between the two true vocal chords
  - d. primarily between the cricoid and the thyroid cartilage

7. The nasolacrimal duct empties its contents into the
- a. inferior meatus
  - b. superior turbinate
  - c. inferior conchae
  - d. middle meatus
8. Emphysema is caused by excessive smoking and mainly
- a. causes too much surfactant
  - b. excites dust cells to pick up more carbon
  - c. reduces the elasticity of the elastic fibers
  - d. creates a small thoracic cavity
9. A region of the adult brain that does not produce new nerve cells is the
- a. olfactory epithelium
  - b. cerebellum
  - c. dentate gyrus
  - d. precentral gyrus
10. The most common type of glia cell in the CNS is the
- a. oligodendrocyte
  - b. microglia
  - c. Schwann cell
  - d. astrocyte
11. Schwann cells and oligodendroglia both form
- a. surfactant
  - b. myelin
  - c. axons
  - d. neurotransmitters
12. Which function is not true for astrocytes?
- a. form pial-glial membrane
  - b. stimulate formation of blood brain barrier
  - c. form myelin
  - d. store glycogen for nerve cell use

13. When a nerve cell is injured, what is not correct from the choices below?
- chromatolysis takes place
  - neuronal soma swells with fluid
  - Nissl disperses to the periphery of the soma
  - neuronal soma shrinks
14. What is not true about an axon collateral?
- branches at a node of Ranvier
  - can have either ascending or descending branches
  - occurs between glial cells
  - only comes off of the axon hillock
15. Calmodulin combines with \_\_\_\_\_ to align cytoskeleton to direct vesicles to presynaptic membrane.
- Na<sup>+</sup>
  - Mg<sup>++</sup>
  - Ca<sup>++</sup>
  - K<sup>+</sup>
16. By "hopping" on a carrier, cocaine prevents the re-uptake of
- acetylcholine
  - glutamate
  - norepinephrine
  - dopamine
17. The nervous system and the skin develop from which germ layer?
- ectoderm
  - endoderm
  - epiderm
  - mesoderm
18. The outer layer of the blastocyst forms part of the
- embryo
  - fetus
  - placenta
  - inner cell mass

19. Eating green vegetables and wheat products which contain folic acid can prevent spina bifida which occurs most commonly in the \_\_\_\_\_ region of the vertebral column.
- a. cervical
  - b. thoracic
  - c. lumbar
  - d. sacral
20. The roof plate of the IV ventricle which consists of pia and ependyma forms the choroid plexus with the addition of
- a. astrocytes
  - b. capillaries
  - c. microglia
  - d. reticular fibers
21. The inferior horn of the lateral ventricle is found in which lobe of the cerebral hemispheres?
- a. frontal
  - b. parietal
  - c. temporal
  - d. occipital
22. Cerebrospinal fluid flows from the III ventricle into the
- a. lateral ventricle
  - b. posterior horn
  - c. IV ventricle
  - d. aqueduct
23. How much CSF is in the ventricles at any one time under normal circumstances?
- a. 700 cc
  - b. 125 cc
  - c. 25 cc
  - d. 2000 cc

24. Which cells do not come from the neural crest?
- dorsal root ganglia
  - autonomic nervous system cells
  - adrenal cortex
  - adrenal medulla
25. What cranial nerves come from the hind brain?
- V through XII
  - III and IV
  - I and II
  - IV through XII
26. The inferior colliculus is concerned with what function?
- auditory
  - vision
  - kinesthetic sense
  - epicritic touch
27. The pons connects the cerebral cortex with the
- crus cerebri
  - thalamus
  - cerebellum
  - basal ganglia
28. The little one inch long medulla oblongata has many important functions including:
- cardiovascular and respiratory
  - vision
  - olfaction
  - conjugate eye movements
29. Parkinson's disease is caused by loss of nerve cells in the
- thalamus
  - subthalamic nucleus
  - tegmentum
  - substantia nigra
30. A pineal gland converts neuron signals to endocrine output as
- serotonin
  - melatonin
  - calcitonin
  - pinealotonin



**Part II. Mark A for True and B for False.**

- A 31. The premotor cortex allows one to initially visualize the motor activity before executing it.
- A 32. The medial orbital frontal cortex is involved in emotional functions associated with the hypothalamus and amygdala.
- B 33. A frontal lobotomy severs the frontal cortex from the hypothalamus.
- B 34. An injury to the superior parietal lobe (area 5 and 7) causes a person to become fastidious about his/her personal appearance.
- A 35. If one injures the visual association area, one can still see, but not understand what the visual input means.
- B 36. The white line of Gennari, the outer myelinated fibers of layer IV, is unique to the primary auditory cortex.
- B 37. A lesion in Heschl's gyrus causes auditory hallucinations.
- B 38. Ten of the twelve cranial nerves are related in function to the eye.
- A 39. The lateral rectus eye muscle is innervated by the abducens cranial nerve.
- B 40. The levator palpebrae eye muscle does not function if the IV cranial nerve is injured.
- B 41. When a speck of dust lands on your cornea, the III cranial nerve is stimulated.
- B 42. The retina is an outgrowth of the mesencephalon.
- B 43. For you to swallow, both the VIII and XII cranial nerves are essential for these movements.
- A 44. For you to bring your head down toward your chest, the XI cranial nerve must be intact.
- B 45. When your tooth aches, the VII cranial nerve is firing.

- A 46. Both the III and IV cranial nerve nuclei are in the mesencephalon or midbrain.
- A 47. The hindbrain includes the pons, medulla, and cerebellum where the IV ventricle is also found.
- A 48. The cerebrospinal fluid flows from the inferior horn to the body of the lateral ventricle.
- B 49. For you to chew, the VI cranial nerve is firing.
- A 50. Broca's aphasia means you cannot speak.
- A 51. For you to find the light switch before the light goes on requires your dorsal columns to be intact.
- A 52. Free nerve endings are the receptors for pain.
- A 53. Meissner's corpuscles are the receptors for refined touch.
- A 54. All sensory pathways coming up the cord to the cerebral cortex should have at least 3 synapses.
- B 55. The dorsal horns in the cord are motor in function.
- B 56. Syringomyelia is a disease of the anterior horn cells.
- A 57. Working memory is associated with the frontal cortex and recent memory with the hippocampus.
- B 58. Presynaptic and postsynaptic cell membranes touch tightly.
- B 59. A corticospinal tract always ends on an anterior horn cell.
- A 60. On a pseudounipolar cell the peripheral process is myelinated.

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