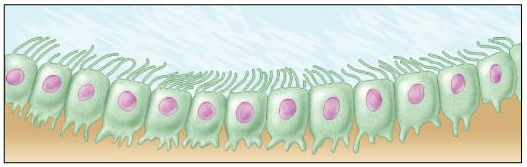
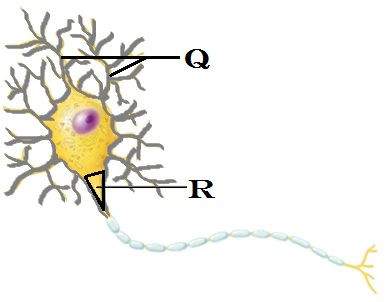
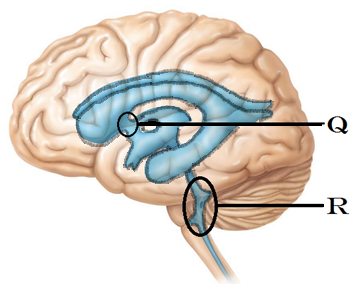
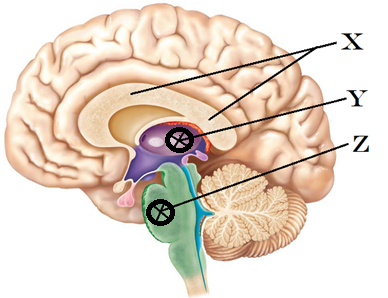
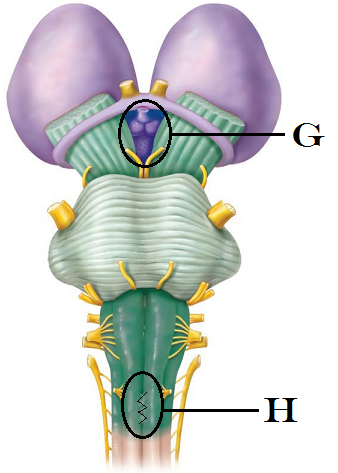
**BSC 181 Exam Four**

Please read all questions carefully. There is one best answer for each question.

1. This highly branched neuroglial cell has a star-shaped appearance. It is associated with capillaries and helps with neuron nutrition.
   1. Oligodendrocyte
   2. Schwann cell
   3. Microglial cell
   4. Ependymal cell
   5. Astrocyte
2. Neurons are described as “amitotic.” What does this mean
   1. They are filled with fluid
   2. They lack a nucleus
   3. They do not undergo cellular division
   4. They absorb toxins
   5. They are unable to repair minor damage
3. Which neuroglial cells are associated with cerebrospinal fluid production?
   1. Schwann cell
   2. Oligodendrocyte
   3. Astrocyte
   4. Ependymal cell
   5. Microglial cell
4. An axon bundle that runs through the central nervous system is referred to as a \_\_\_ while an axon bundle that runs in the peripheral nervous system is a \_\_\_\_.
   1. Primary fiber; secondary fiber
   2. Fiber; process
   3. Axon; dendrite
   4. Tract; nerve
   5. Afferent; efferent
5. Regarding dendrites, indicate the answer that is a **false** statement
   1. Dendrites are often short and diffuse
   2. Most dendrites are highly branched
   3. All nerves have at least one extension that functions as a dendrite
   4. Dendrites are the input region of the neuron
   5. Dendrites convey action potentials towards the cell body
6. What is the function of the choroid plexus?
   1. Oxygenates blood within the brain tissue
   2. It acts as a chemoreceptor sensitive to H+
   3. Filters/makes the cerebrospinal fluid
   4. Regulates the blood flow through the ventricles
   5. Provides nutrients for glial cells
7. In the PNS, the \_\_\_\_\_\_ produces the myelination surrounding an axon while in the CNS, the \_\_\_\_\_ produces it.
   1. Oligodendrocyte; Schwann cell
   2. Schwann cell; Nissl body
   3. Nissl body; Microglia
   4. Schwann cell; Ependymal cell
   5. Schwann cell; Oligodendrocyte
8. Identify the structure indicated by “Q”
   1. Nissl body
   2. Soma
   3. Dendrite
   4. Axon
   5. Axonal hillock
9. Identify the structure indicated by “R”
   1. Podocyte
   2. Nissl body
   3. Soma
   4. Dendrite
   5. Axonal hillock
10. The above image represents
    1. A nerve commonly found in the olfactory tissues
    2. A nerve commonly found in the ear
    3. The most common nerve type in the CNS
    4. The most common nerve type in the PNS
    5. A nerve commonly found in the retina
11. With a resting membrane,
    * 1. There are more positive ions inside the membrane than outside the membrane
      2. The voltage gates are triggered to move the anions
      3. There are more positive ions outside the membrane than inside the membrane
      4. The overall charge across the membrane is negative
      5. The overall charge across the membrane is positive
    1. 1 and 2
    2. 3 and 4
    3. 3 and 2
    4. 1, 2, and 4
    5. 2, 3, and 5
12. Where would one find the **tentorium cerebelli**?
    1. Separating cerebrum and cerebellum
    2. Attached to the posterior median sulcus
    3. Along the central canal of the spinal cord
    4. Separating right and left cerebral hemispheres
    5. Tightly adhered to the brainstem
13. At **-55 mV** threshold becomes self-generating. Which event occurs as the threshold is met?
    1. Voltage gates open and K+ rushes into the membrane
    2. Voltage gates open and K+ rushes out of the membrane
    3. Voltage gates open and Na+ rushes into the membrane
    4. Voltage gates open and Cl- rushes into the membrane
    5. Voltage gates open and Na+ rushes out of the membrane
14. During **repolarization**,
    1. Voltage gates open and Na+ rushes out of the membrane
    2. Voltage gates open and K+ rushes into the membrane
    3. Voltage gates open and Cl- rushes into the membrane
    4. Voltage gates open and Na+ rushes into the membrane
    5. Voltage gates open and K+ rushes out of the membrane
15. At which stage does the membrane potential become **positive**?
    1. Repolarization
    2. The membrane potential never becomes positive
    3. Hyperpolarization
    4. Resting
    5. Depolarization/Action Potential
16. Which neuroglial cells are described as **small** and **phagocytic**?
    1. Astrocytes
    2. Microglia
    3. Oligodendrocytes
    4. Ependymal cells
    5. Neuron
17. Which axon would have the **greatest** rate of conduction?
    1. All axons will conduct their impulses at the same rate.
    2. A large diameter, myelinated axon
    3. A small diameter, myelinated axon
    4. A small diameter, unmyelinated axon
    5. A large diameter, unmyelinated axon
18. Which of the following means are used to **inactivate** neurotranmitters once they’ve bound to the dendritic receptors?
    1. Acids are released to change the conformation of protein-based neurotransmitters
    2. Enzymes are released to break down neurotransmitters
    3. The axon terminal blocks the neurotransmitters from being reabsorbed
    4. The neurotransmitters can be reabsorbed by oligodendrocytes
    5. Only inhibitory neurotranmitters need to be degraded, and they break away naturally.
19. The function of a **divergent** neuronal pool is to
    1. Suppress the signal
    2. Convert the signal
    3. Simplifiy the signal
    4. Modify the signal
    5. Amplify the signal
20. Which structure is found in the **telencephalon**?
    1. Midbrain
    2. Pons
    3. Cerebrum
    4. Thalamus
    5. Medulla oblongata
21. Where are the pyramidal cells found? (The pyramidal cells are the cell bodies for the **motor** neurons in the corticospinal tract)
    1. Precentral sulcus
    2. Postcentral sulcus
    3. Precentral gyrus
    4. Postcentral gyrus
    5. Prefrontal cortex
22. Which of the neurotransmitters listed below shares a similar function to the endorphins and enkephalins?
    1. Substance P
    2. GABA
    3. Dopamine
    4. Nitric oxide
    5. Acetylcholine
23. The **diencephalon**
    1. Is composed of the pituitary gland and the parietal lobe
    2. Is the transition site between pons and medulla oblongata
    3. Is composed of the pineal gland and the endothalamus
    4. Is composed of thalamus, hypothalamus, and epithalamus
    5. Is composed of the fourth ventricle and the cerebellum
24. This **auditory association area** permits the perception of sound and can store sound memories
    1. Occiptial association area
    2. Broca’s area
    3. Wernicke’s area
    4. Limbic region
    5. Prefrontal cortex
25. This area is present usually in the left hemisphere and helps to control the **muscles of speech**.
26. Occiptial association area
27. Limbic region
28. Broca’s area
29. Prefrontal cortex
30. Wernicke’s area
31. Which option best describes the function of the **cerebellum**?
    1. Provides physical support for the occipital lobe
    2. Modifies and relays incoming visceral impulses.
    3. Integration of sensory input and coordination of motor input
    4. Generates delta waves during sleep
    5. Origination of all conscious motor control
32. Identify “Q” This structure allows CSF movement.
    1. Cerebral Aqueduct
    2. Lateral aperture
    3. Lateral Ventricle
    4. Interventricular foramina
    5. Homunculus
33. Identify “R”
    1. Central Canal
    2. Canal of Schlemm
    3. Cerebral Aqueduct
    4. Third Ventrical
    5. Fourth Ventrical
34. In which region is the **auditory** cortex located?
    1. Temporal region
    2. Parietal region
    3. Frontal region
    4. Insular region
    5. Occipital region
35. In which time frame will a stimulated neuron be **unable** to respond
    1. During its resting state
    2. During the absolute refractory period
    3. During the relative refractory period
    4. During the hyperpolarized period
    5. During the initial depolarizing period
36. Which fibers will pass through the thalamus
    1. Olfactory
    2. Somatic motor fibers
    3. Autonomic motor fibers
    4. All motor fibers
    5. All spinal ascending fibers
37. This midbrain structure connects the third ventricle to the fourth ventricle
    1. Interventricular foramen
    2. Lateral foramina
    3. Central canal
    4. Cerebral aqueduct
    5. Ventricular bridge
38. In the medulla oblongata, what are the two longitudinal ridges that are formed by the corticospinal tracts?
    1. Longitudinal fissure
    2. Pyramids
    3. Gyri
    4. Sulcus
    5. Tranverse fissure
39. Identify “X” This structure allows communication between hemispheres
    1. Corpus callosum
    2. Pituitary gland
    3. Optic Chiasma
    4. Olfactory bulb
    5. Pons
40. Identify “Y”
    1. Mammillary body
    2. Pons
    3. Pyramidal tract
    4. Pineal gland
    5. Thalamus
41. Identify “Z”
    1. Pons
    2. Third ventricle
    3. Fourth ventricle
    4. Midbrain
    5. Medulla oblongata
42. A dendrite receives, **in rapid succession**, several excitatory sub-threshold stimulations that add up and trigger an action potential. What is the process called?
    1. Temporal summation
    2. Spatial summation
    3. Bilateral summation
    4. Repetitive summation
    5. Recurrent summation
43. The Corpus Collosum connects right and left hemispheres. What type of white fibers is expected to be seen?
    1. Radiation fibers
    2. Commisural fibers
    3. Striation fibers
    4. Projection fibers
    5. Association fibers
44. The falx cerebri is made up of \_\_\_\_\_ and is located \_
    1. Dura mater: within the transverse fissure
    2. Pia mater: along the cerebellum
    3. Pia mater; within the longitudinal fissure
    4. Dura mater; within the longitudinal fissure
    5. Arachnoid mater: along the vermis of the cerebellum
45. A fiber in the white matter of the brain that originates in the right primary visual cortex and then runs to the right visual association area would fall into which category?
    1. Radiation fibers
    2. Commisural fibers
    3. Striation fibers
    4. Projection fibers
    5. Association fibers
46. This region of the brain is associated with intellect, recall, and personality. It is also linked to the limbic system. Which region is it?
    1. Temporal region
    2. Insula of Reil
    3. Lemnitic nuclei
    4. Postcentral cortex
    5. Prefrontal cortex
47. Which division is created by the lateral sulcus on the surface of the brain?
    1. Separates precentral from postcentral regions
    2. Separates occipital lobe from cerebellum
    3. Separates motor cortex from sensory cortex
    4. Separates parietal lobe and temporal lobe
    5. Separates white matter from gray matter
48. Which of the following is true with regards to a graded potential
    1. Graded potentials occur only in the axons
    2. Graded potentials are almost always inhibitory
    3. Graded potentials are able to travel long distances without degrading
    4. Graded potentials degrade quickly
    5. Graded potentials can cross the synapse
49. Identify “G”
    1. Lateral Geniculate nucleus of the Thalamus
    2. Mammillary Bodies of the Hypothalamus
    3. Pineal gland of the Epithalamus
    4. Olfactory lobe
    5. Cerebellar peduncle
50. Identify “H”
    1. Decussation of the Pyramids
    2. Pons
    3. Epithalamus
    4. Cerebral peduncle
    5. Arbor Vitae
51. Where are the satellite cells found?
    1. At the axon terminus
    2. Surrounding the soma of a neuron
    3. In the white matter of the spinal cord
    4. In the white matter of the brain
    5. Within the ventricles of the brain
52.  This type of neuron is commonly found as a sensory neuron. Based on its **structure**, how would it be classified?
    1. Efferent
    2. Multipolar
    3. Bipolar
    4. Unipolar
    5. Northpolar
53. In which region of the brain is the general (common) interpretation area located?
    1. Parietal
    2. Temporal
    3. Occipital
    4. All of the above
54. In which area of the brain is the blood-brain barrier **lacking or incomplete** in order to allow the chemical composition of the blood to be evaluated?
    1. Pineal gland
    2. Hypothalamus
    3. Pons
    4. Cerebellum
    5. Prefrontal cortex
55. Which meningeal tissue is composed of two layers that occasionally separate to create spaces called sinuses?
    1. Pia mater
    2. Arachnoid mater
    3. Dura mater
    4. Doesn’t mater

Turn in Opscan

Turn in Exam packet

If you have a question/comment, put your name on your exam and place it in a separate pile at the front.

Grades should be posted by late tonight.