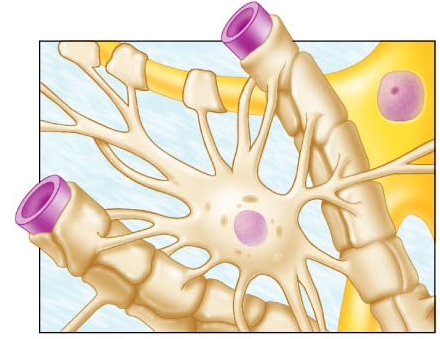
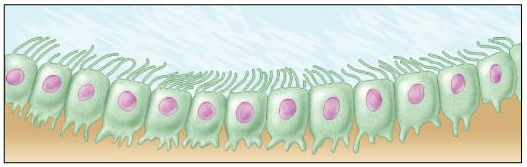
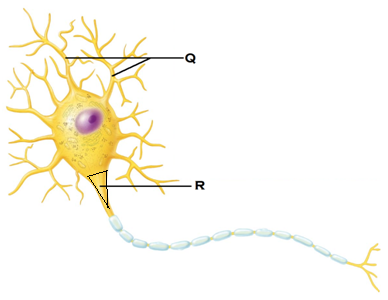
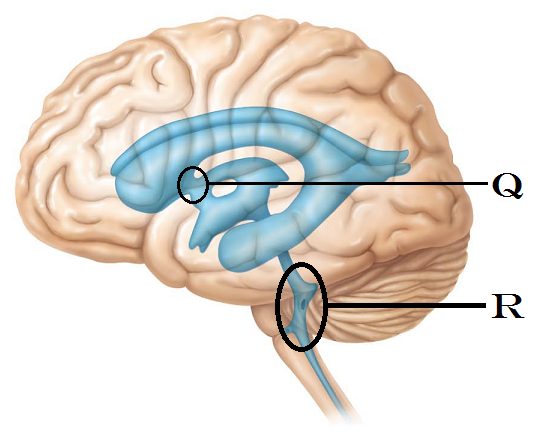
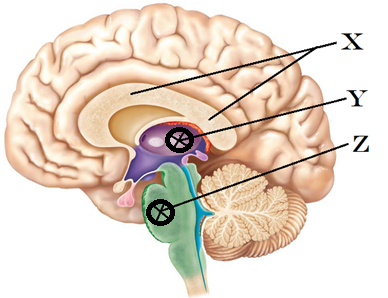
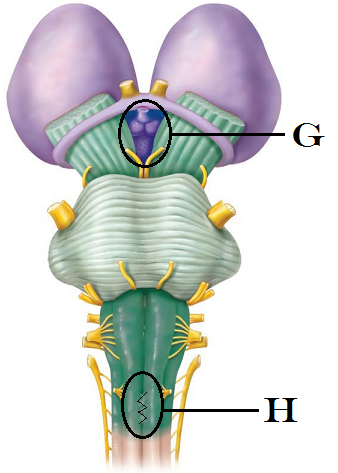
**BSC 181 Exam Four**

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. Ependymal cell
   2. Astrocyte
   3. Oligodendrocyte
   4. Schwann cell
   5. Microglial cell
2. Neurons are described as “amitotic.” What does this mean
   1. They absorb toxins
   2. They do not undergo cellular division
   3. They are filled with fluid
   4. They lack a nucleus
   5. They are unable to repair minor damage
3. Which neuroglial cells are associated with cerebrospinal fluid production?
   1. Ependymal cell
   2. Microglial cell
   3. Oligodendrocyte
   4. Astrocyte
   5. Schwann 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. Tract; nerve
   2. Afferent; efferent
   3. Primary fiber; secondary fiber
   4. Fiber; process
   5. Axon; dendrite
5. Regarding dendrites, indicate the answer that is a **false** statement
   1. Dendrites are the input region of the neuron
   2. Dendrites are often short and diffuse
   3. Most dendrites are highly branched
   4. All nerves have at least one extension that functions as a dendrite
   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. Regulates the blood flow through the ventricles
   3. Provides nutrients for glial cells
   4. It acts as a chemoreceptor sensitive to H+
   5. Filters the cerebrospinal fluid
7. In the PNS, the \_\_\_\_\_\_ produces the mylenation surrounding an axon while in the CNS, the \_\_\_\_\_ produces it.
   1. Schwann cell; Ependymal cell
   2. Schwann cell; Oligodendrocyte
   3. Schwann cell; Nissl body
   4. Nissl body; Microglia
   5. Oligodendrocyte; Schwann cell
8. Identify the structure indicated by “Q”
   1. Dendrite
   2. Axon
   3. Axonal hillock
   4. Nissl body
   5. Soma
9. Identify the structure indicated by “R”
   1. Podocyte
   2. Dendrite
   3. Axonal hillock
   4. Nissl body
   5. Soma
10. The above image represents
    1. A nerve commonly found in the olfactory tissues
    2. The most common nerve type in the PNS
    3. A nerve commonly found in the retina
    4. A nerve commonly found in the ear
    5. The most common nerve type in the CNS
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. 1, 2, and 4
    3. 2, 3, and 5
    4. 3 and 4
    5. 3 and 2
12. Where would one find the **tentorium cerebelli**?
    1. Along the central canal of the spinal cord
    2. Separating right and left cerebral hemispheres
    3. Tightly adhered to the brainstem
    4. Separating cerebrum and cerebellum
    5. Attached to the posterior median sulcus
13. At **-55 mV** threshold becomes self-generating. During the ensuing **action potential**, which event takes place?
    1. Voltage gates open and Na+ rushes into the membrane
    2. Voltage gates open and Cl- rushes into the membrane
    3. Voltage gates open and Na+ rushes out of the membrane
    4. Voltage gates open and K+ rushes into the membrane
    5. Voltage gates open and K+ rushes out of the membrane
14. During **repolarization**,
    1. Voltage gates open and Cl- rushes into the membrane
    2. Voltage gates open and Na+ rushes into the membrane
    3. Voltage gates open and Na+ rushes out of the membrane
    4. Voltage gates open and K+ 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. Hyperpolarization
    2. Resting
    3. Depolarization/Action Potential
    4. Repolarization
    5. The membrane potential never becomes positive
16. Which neuroglial cells are described as small and phagocytic?
    1. Astrocytes
    2. Ependymal cells
    3. Neuron
    4. Microglia
    5. Oligodendrocytes
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. Simplifiy the signal
    2. Modify the signal
    3. Amplify the signal
    4. Suppress the signal
    5. Convert the signal
20. Which structure is found in the **telencephalon**?
    1. Cerebrum
    2. Thalamus
    3. Medulla oblongata
    4. Midbrain
    5. Pons
21. Where are the pyramidal cells found? (The pyramidal cells are the cell bodies for the **motor** neurons in the corticospinal tract)
    1. Precentral gyrus
    2. Postcentral gyrus
    3. Prefrontal cortex
    4. Precentral sulcus
    5. Postcentral sulcus
22. Which of the neurotransmitters listed below shares a similar function to the endorphins and enkephalins?
    1. Substance P
    2. Nitric oxide
    3. Acetylcholine
    4. GABA
    5. Dopamine
23. The **diencephalon**
    1. Is composed of the pineal gland and the endothalamus
    2. Is composed of thalamus, hypothalamus, and epithalamus
    3. Is composed of the fourth ventricle and the cerebellum
    4. Is composed of the pituitary gland and the parietal lobe
    5. Is the transition site between pons and medulla oblongata
24. This **auditory association area** permits the perception of sound and can store sound memories
    1. Occiptial association area
    2. Limbic region
    3. Prefrontal cortex
    4. Broca’s area
    5. Wernicke’s area
25. This area is present usually in the left hemisphere and helps to control the **muscles of speech**.
26. Broca’s area
27. Prefrontal cortex
28. Wernicke’s area
29. Occiptial association area
30. Limbic region
31. Which option best describes the function of the **cerebellum**?
    1. Integration of sensory input and coordination of motor input
    2. Generates delta waves during sleep
    3. Origination of all conscious motor control
    4. Provides physical support for the occipital lobe
    5. Modifies and relays incoming visceral impulses.



1. Identify “Q”
   1. Lateral Ventricle
   2. Interventricular foramina
   3. Homunculus
   4. Cerebral Aqueduct
   5. Lateral aperture
2. Identify “R”
   1. Central Canal
   2. Canal of Schlemm
   3. Cerebral Aqueduct
   4. Third Ventrical
   5. Fourth Ventrical
3. In which region is the **auditory** cortex located?
   1. Temporal region
   2. Parietal region
   3. Frontal region
   4. Insular region
   5. Occiptal region
4. 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
5. 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
6. 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
7. 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
8. Identify “X”
   1. Corpus callosum
   2. Pituitary gland
   3. Optic Chiasma
   4. Olfactory bulb
   5. Pons
9. Identify “Y”
   1. Mammilary body
   2. Pons
   3. Pyramidal tract
   4. Pineal gland
   5. Thalamus
10. Identify “Z”
    1. Pons
    2. Third ventricle
    3. Fourth ventricle
    4. Midbrain
    5. Medulla oblongata
11. A dendrite receives, **in rapid succession**, several excitatory subthreshold 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. Identify “G”
    1. Thalamus
    2. Hypothalamus
    3. Epithalamus
    4. Olfactory lobe
    5. Cerebellar peduncle
19. Identify “H”
    1. Decussation of the Pyramids
    2. Pons
    3. Epithalamus
    4. Cerebral peduncle
    5. Arbor Vitae
20. 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
21.  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
22. In which region of the brain is the general (common) interpretation area located?
    1. Parietal
    2. Temporal
    3. Occipital
    4. All of the above
23. 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
24. 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 comment, put your name on your exam and place it in a separate pile at the front.

Grades should be posted by late tonight.