Lecture #01 Neurons, Glia, Meninges, Brain

Question 1: Which -polar classification best fits the sensory receptive neurons of the dorsal root ganglia?

a) Bipolar depression

b) Pseudounipolar

c) Pyramidal-polar

d) Multipolar

e) Stellate-polar

Lecture #01 Neurons, Glia, Meninges, Brain

Question 2: Which glial cell type is most important for myelinating peripheral nervous system axons?

a) Schwann cell

b) Satellite cell

c) Astrocyte

d) Microglial cell

e) Oligodendrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 3: Which is most likely to send an axon to subcortical brain locations?

a) A granule neuron of cerebral cortex layer 4

b) A pyramidal neuron of cerebral cortex layer 5

c) An astrocyte

d) A neuron that releases the neurotransmitter acetylcholine onto a muscle fiber

e) An oligodendrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 4: What is the special role of capillary endothelial cells in the brain?

a) Blood-brain barrier

b) Release of neuromodulators

c) Retention of synaptic vesicles

d) Absence of blood-brain barrier

e) Location lateral to the sulcus limitans

Lecture #01 Neurons, Glia, Meninges, Brain

Question 5: Where are the axons of Brodmann's area 4 giant Betz cells going?

a) To the lateral horn of the spinal cord

b) To the ventral horn of the spinal cord

c) To the cerebral cortex

d) To cranial nerve nuclei III through VI

e) To the hippocampus

Lecture #01 Neurons, Glia, Meninges, Brain

Question 6: The thalamus has which major function?

a) It is the primary input to the cerebellum

b) It is the primary output from the cerebral cortex

c) It relays inputs from many parts of the brain to the cerebral cortex

d) It is the primary input to the basal ganglia

e) It inhibits the brain via the neurotransmitter GABA

Lecture #01 Neurons, Glia, Meninges, Brain

Question 7: Which is most likely to be a projection neuron?

a) A neuron that releases the neurotransmitter GABA

b) A stellate neuron of cerebral cortex layer 4

c) A pyramidal neuron of cerebral cortex layer 5

d) An oligodendrocyte

e) An astrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 8: At which location is the blood brain barrier most easily penetrated?

a) Astrocyte

b) Dura Mater

c) Arachnoid

d) Area Postrema

e) Pia mater

Lecture #01 Neurons, Glia, Meninges, Brain

Question 9: The vertebral arteries send blood directly into which artery or arteries?

a) Basilar

b) Posterior cerebral

c) Carotid(s)

d) Anterior cerebral

e) Middle cerebral

Lecture #01 Neurons, Glia, Meninges, Brain

Question 10: What is stained by the Golgi stain?

a) cell bodies of cells with unmyelinated but not myelinated axons

b) both cell bodies and myelin

c) gray matter but not cell bodies or neuropil

d) unmyelinated axons but not myelinated axons

e) a small percentage of neurons in their entirety

Lecture #01 Neurons, Glia, Meninges, Brain

Question 11: Looping brain pathways likely serve what purpose(s)?

a) Interconnecting the basal ganglia and the cerebellum

b) Extension of motor commands and formation of memories

c) Prevention of negative and positive feedback

d) Monosynaptic reflexes

e) Relaying to the cerebral cortex and bypassing the thalamus

Lecture #01 Neurons, Glia, Meninges, Brain

Question 12: The coordinate direction anterior is the same as which other coordinate directions?

a) Posterior in the cerebrum, ventral in the spinal cord

b) Dorsal in the cerebrum, ventral in the spinal cord

c) Rostral in the cerebrum, ventral in the spinal cord

d) Posterior in the cerebrum, dorsal in the spinal cord

e) Caudal in the cerebrum, dorsal in the spinal cord

Lecture #01 Neurons, Glia, Meninges, Brain

Question 13: Which meningeal tissue provides the toughest physical barrier to protect the brain?

a) Area Postrema

b) Dura Mater

c) Arachnoid

d) Pia mater

e) Astrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 14: Which glial cell type is most important for isolating neurons from blood-borne toxins?

a) Oligodendrocyte

b) Schwann cell

c) Astrocyte

d) Microglial cell

e) Pyramidal cell

Lecture #01 Neurons, Glia, Meninges, Brain

Question 15: Where are the axons in the middle cerebellar peduncle going?

a) To the lateral horn of the spinal cord

b) To cranial nerve nuclei III through VI

c) To the cerebellum

d) To the internal capsule

e) To the cerebral cortex

Lecture #01 Neurons, Glia, Meninges, Brain

Question 16: Which is most likely to be a local interneuron?

a) An oligodendrocyte

b) A neuron that releases the neurotransmitter acetylcholine onto a muscle fiber

c) A pyramidal neuron of cerebral cortex layer 5

d) A granule neuron of cerebral cortex layer 4

e) An astrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 17: Which glial cell type is most important for myelinating central nervous system axons?

a) Satellite cell

b) Schwann cell

c) Oligodendrocyte

d) Microglial cell

e) Astrocyte

Lecture #01 Neurons, Glia, Meninges, Brain

Question 18: Into which structure(s) does the metencephalon develop?

a) Thalamus and hypothalamus

b) Rhombencephalon

c) Medulla

d) Pons and cerebellum

e) midbrain

Lecture #01 Neurons, Glia, Meninges, Brain

Question 19: The carotid arteries send blood directly into which artery or arteries?

a) Middle cerebral

b) Carotid(s)

c) Basilar

d) Anterior communicating

e) Posterior cerebral

Lecture #01 Neurons, Glia, Meninges, Brain

Question 20: Disynaptic pathways?

a) Include the motor cortex and frontal and temporal language areas

b) Have only a single set of interneurons between sensory and motor neurons

c) Use only the neurotransmitter GABA

d) Were first shown by the demonstration of active brain areas by fMRI

e) Would involve only sensory neurons and motor neurons, but do not exist in mammals

Lecture #01 Neurons, Glia, Meninges, Brain

Question 21: Which glial cell type participates in the glutamate-glutamine cycle (or shuttle)?

a) Astrocyte

b) Oligodendrocyte

c) Satellite cell

d) Schwann cell

e) Microglial cell

Lecture #01 Neurons, Glia, Meninges, Brain

Question 22: What do axon terminals and dendritic spines have in common?

a) They form parts of synapses

b) They contain the nucleus

c) They are typically uniform in diameter along their length

d) They are parts of glial cells, not neurons

e) They are found within the perikaryon of the neuron