exam-4-study-guide

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Today's topics

- Student talk: Madisyn Barnes
- Student talk: Grace Desjardins
- Review for Exam 4

History

- Descartes thought ____ about the ____
- Fluid from the cerebral ventricles was once thought to ____

Methods

- Single unit recordings have ____ spatial and ____ temporal resolution
- EEG has____ spatial and ____ temporal resolution
- Single unit recordings measure ____

Anatomy

- Directional terms, slices
  - In the human forebrain ____ and superior overlap.
- Gross
  - The ____ means "little brain" in Latin
  - The ____ and ____ in the midbrain release dopamine
  - The ____ controls endocrine and ANS activity.

- Gross anatomy
  - The insula is located deep inside the ____.
  - Forebrain/midbrain/hindbrain
  - ventricles/CSF, meninges, blood supply
  - Gyri/sulci
  - lobes, insula/insular cortex
  - gray/white matter

Cellular anatomy

- Neurons receive most of their input on the ____ and ____.
- Gray matter is made of ____

Neurophysiology

- Resting potential
  - In neuron at rest, [??] inside is greater than outside; What force(s) ____ push [Na+] inward?
- Ca++ influx is involved in ____, ____, and ____.
- EPSP/IPSPs are ____ than action potentials

- Nodes of Ranvier contain lots of ____gated channels
- The absolute refractory period occurs when voltage-gated Na+ channels ____
- Action potential phases, causes/components
- Synaptic transmission
  - EPSPs, IPSPs
- Synaptic plasticity, LTP, NMDA receptors

Neurochemistry

- Big Three – Glu, GABA, ACh
  - Muscarinic receptors bind ____
- Neuromodulators – DA, NE, 5-HT
- Hormones
  - Oxytocin, vasopressin are released from ____.

Evolution and development

- There is a "mammalian" brain plan (True/False)
- Vertebrates vs. non, humans vs. other vertebrates

Emotion

- The ____ lobe contains the amygdala
- Pleasure/reward systems
- Fear, stress in behavior and brain
  - What's more important to measure, objective stress or perceived stress?

Perception and Action

- Sensory fibers enter the (dorsal/ventral) spinal cord.
- Parietal lobe contains ____ cortex.
- Photoreceptor cells release more neurotransmitter in (darkness/light)
- Can't see reddish-green because long ("red") and medium ("green") cones ____

- Areas of cortex devoted to moving fingers, tongue are (large/small)
- Most retinal ganglion cells project to the ____.
- Sound direction is signaled by ____.
- Topographic maps: somatosensation, audition, vision
- Perceiving what vs. where: audition, vision
- Functional segregation: by receptor, type of info
- Receptive fields

Memory

- Long-term Potentiation (LTP) involves neuron A's connection to neuron B ____
- NMDA receptor opens when sending cell ____ and receiving cell ____.
- Amnesia
  - ____ is impaired; ____ is spared.
- NMDA receptors and Hebbian learning
- Hippocampus size and memory demands