Exams of 09/06/2021

Romei's part:

· How is brain formed, why are neurons important, and how they work.

· The definition of Resting Potential (which is not fixed, but rather something that oscillates)

· Alpha waves (topic chosen by the student) and how to relate it to the Decision-Making process.

· Hebbian Plasticity, why feedback connections are so important.

Di Pellegrino's part:

· Talk about something that you liked

· Value vs Reward

· RL in the brain (dopamine), why dopamine is important (predict reward in order to choose right path of action)

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Additional Question compiled are hereby:

Romei:

- what is a neuron, who discovered it and when and how it works
- how multisensory integration works (i.e. explain the experiment of when a visual stimulus and an auditoryx« < stimulus are presented and you hear the illusion of the double blink of the circle - explain what happens) . Then the teacher asks if this stimulus can be decided. After asking to talk about the insertion where this work is done (which is called Detection Window, something like that - if I don't find this experiment in the clipboard, play back alex's audios or ask him what exactly he meant).
- What are the different effects of TMS & TES on neuron?

o Solution in terms of polarization of neurons. Can't recall exactly.

- philosophical difference between cognition and Neuroscience and how this science has come to be defined
- focus on what is action potential, depolarization, understand about membrane potential, understand about hyperpolarization
- because feedprop is more relevant than backprop (andrea answer: something about the fact that vision is an active process and the brain makes some assumptions to focus on one stimulus instead of others)
- tell me about sensation and perception

- asked about the relationship between CS, AI and Cognition. For example, I talked about multithreading and decision making
- Romei asked me about correlation vs causality and artificial intelligence applications, while Di Pellegrino asked about attention in general
- EEG, Event-related potential and 3D reconstruction
- Romei asked me about multisensory integration and what consciousness is

Di Pellegrino:

- tell me about visual attention or decision making
- talk about space and object based experiments
- choose between Selective Visual Attention or Decision Making explain them and talk about some of their experiments (I chose SVA)

Romei:

Talk about the feedback and feedforward connections. The 2 experiments related to hebbian plasticity in detail

Di Pellegrino:

Select SVA or Decision Making and describe one