1

a). Organization of the brain - short answer

Answer: The brain has distinct functional regions and consists of highly-interconnected network billions individual neurons. And different regions are specialized for different basic and simple function. Cognitive functions are localized within the cerebral cortex, which gives rise to perception, memory, intelligence and consciousness.

b). How do the symptoms of lesions in Wernicke's area differ from those in Broca's area?

Answer: Whereas Broca's patients could understand language but not speak, Wernicke's patient could speak but could not understand language.

C). What happens to deaf patients ability to communicate in sign language when they suffer damage to Broca's or Wernicke's areas?

Answer: Patients with damage in Wernicke's area loss the sign comprehension; and patients with damage in Broca's area have difficulties in grammar or signing fluency.

2

What was your performance time for the congruent and incongruent samples? What factors do you think might affect your performance? How do you think you could improve?

Answer:
My performance time for the congruent samples: 27.1330 S
for the incongruent samples: 42.2000 S

I think the inconsistence between the name in the blank and the color of the blank affects my performance. Since this inconsistence prolongs my recognition process, which needs new connection of synapse.

And I suppose that repeated and concentrated practices will improve my performance. Since these practices could help to connect to new synapse, which could help recognition process.

3

a). In the mammal, what are the primary three regions in which visual input is processed? Which is the most complex? How many different kinds of neurons are there in mouse visual cortex?

Answer: I think the three primary regions are: retina, LGN, and V1.
And, among them, V1 is the most complex region.
At least 42 different type of neurons are there in mouse visual cortex.

b). The “overarching goal of Mindscope is to understand the operations and the flexibility of cortical tissue in the mouse by comprehensively recording and analyzing cellular-level cortical responses.” At what levels is this project investigating the mouse visual nervous system? At which of these levels do you think they have the best chance of achieving their goal?

Answer: At the statistical population density approach level, individual neurons level(including point neuron models and Biophysical neuron models) and system level.

I think that mainly at system level , and where they can ‘produce multiscale simulations where a region of interest (e.g., V1) is modeled in biophysical detail, whereas closely associated regions (e.g., the rest of the visual system) are modeled with point neurons, and the rest of the brain is represented by population statistics. ’ , they have the best chance of achieving their goal.