P.O.N.T.A.S

This problem set is due no later than Friday 14th of December during Marc's office hours from 9 am to 10 am. You can also turn it in at any of the other TA's office hours during the week of the 10th of December.

Name_________________________________ TA_________________________________

1) **2 pts** Parkinson’s disease is characterized by the loss of _______ neurons in the ________ region of the brain.

b) State two treatments for Parkinson’s disease and the major principle behind each treatment.

1. _______________________________________________________________________
   _______________________________________________________________________

2. _______________________________________________________________________
   _______________________________________________________________________

2) **1pt** Depression is characterized by a loss of (CIRCLE ONE: glial / pyramidal cells) and a reduction of neural activity (by fMRI) in the_______ brain area.

3) **1 pt** What part of the brain is affected in people with Huntington’s disease?___________

4) **1 pt** Below are some scenarios. For each scenario, name whether the basal ganglia or the cerebellum is used mostly.

A) You’re up at bat in a softball game and intend to hit a grounder towards left field. However, when the ball arrives, you swing, pop the ball straight up in the air and it lands uncaught in the foul zone. Strike 1. You take note of what you did wrong and adjust your 2nd swing accordingly. Which brain structure did you use to modify your motor output? _______________________________________________________________________

B) You’re participating in an fMRI experiment where you are told to lie still in the MRI scanner. Which brain region inhibits the unwanted movements? _________________
5) 1 pt  Describe the difference between functional and morphological plasticity.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

6) 3 pts You decide to become a psychiatrist and your colleague Dr. Sam Bigglesworthy asks you for a consult one day. He asks you to help diagnose two of his clients.

Patient one: A 27 year old male who for the last six months has been completely unmotivated to participate in his usual hobbies. He has exhibited drastic changes in his eating and sleeping habits and thus has gained a lot of weight. Furthermore he doesn’t show up to work some days and has been threatened to be fired, but he doesn’t care. He will frequently become very upset for no apparent reason. Without administering a brain scan what diagnosis might this client fit best?

What type of treatments would you recommend based on your preliminary diagnosis?

________________________________________________________________________
________________________________________________________________________

Client 2 A 19 year old female burned her house down and told the police that she heard Chuck Norris’ voice in her head and that he told her to do it. You interview her and notice that she is very withdrawn and shows noticeable emotional and language disturbance to the point that often times it is difficult to understand her. She often makes repeated movements and seems to be in a constant dialogue with someone about Chuck Norris even when no-one is around. She would say things like, “Chuck Norris doesn’t actually write books, the words assemble themselves out of fear,” and “When the Boogeyman goes to sleep every night, he checks his closet for Chuck Norris”. Without administering a brain scan what diagnosis might this patient fit best?

________________________________________________________________________
Please Limit Answers to the spaces provided.
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7) 1 pt Consider the statements with respect to cocaine:

a. decreases activity in the occipital lobe
b. a corner stone (s) for Inca “foreign policy”
c. affects uptake of serotonin and dopamine
d. is an excellent local anesthetic

Circle the best answer regarding the above.

A. a, b, c & d are correct
B. b, c & d are correct
C. a, b & c are correct
D. a, c & d are correct.

CIAO, AU REVOIR, ADIOS, BYE, Auf Wiedersehen, Mata ai masho, Salaam.
From the PONTAs.