Unit Two Homework Assignment
C14 Brain

Two Minute Neuroscience: The Meninges
1. What are the three membranes of the meninges?
2. What are the two functions of the meninges?
3. What are the three functions of the dura mater?
4. What layer of the meninges is attached directly to the brain?
5. What layer is in the middle? How is this layer described? Filled with what?

Cerebrospinal Fluid Explained
1. What type of damage is prevented by the CSF?
2. 3. What are the four functions of the CSF?
4. What structure separates the two lateral ventricles?
5. What structure produces CSF? Location?
6. What is the name given to the structures which prevents unwated substances from leaking into the CSF?
7. What is the circulation pathway for the CSF?

Two Minute Neuroscience: Ventricles
1. What are the ventricles? Function?
2. What are they lined with?
3. What cells produce the cerebral spinal fluid?
4. What is the function of the cerebral spinal fluid?
5. How many ventricles are in the brain?
6. Where will CSF flow into from the fourth ventricle?
7. What condition occurs if CSF is not able to flow out of the fourth ventricle? Condition?

Two Minute Neuroscience: The Brainstem
1. What three structures are connected by the brainstem?
2. What are the three segments of the brainsteim? Functions of each?
3. What are the four bumps on the posterior of the midbrain called? What are the functions of the upper and lower bumps?
4. What molecule is produced in the midbrain? What two regions in midbrain produce this molecule? What functions are associated with these areas?

Two Minute Neuroscience: The Amygdala
1. Location? Part of what system?
2. Fuctions? Historical and now believed function?
3. Role in memory? Type of memories?4.

The Triune Brain - How the brain works.
1. What is the most primitive part of our brain? Inherited from what type of animal?
2 What type of functions were essential for the survival of reptiles?
3. What is the "instinctual" function of the reptilian brain?
4. What was the second brain formation to evolve? What type of early animal did we inherit this from?
5. What type of functions were acquired from the second brain formation?
6. Is the limbic system conscious or unconscious thoughts?
7. What was the last part of the brain to form? Functions?
8. What brain formations provide for conscious and unconscious minds?

Hack Your Lizard Brain

1. What part of the brain takes care of all the regulatory stuff for us?
2. What type of stuff is the middle portion of our brain about?
3 What is the function of the last part of the brain to evolve?
4. If the reptilian brain sets the heart rate then what brain formation makes adjustments as a consequence of different emotional states?
5. Do the different brain formations "talk to each other"? Give examples.
6. What is the principle by which bio-feedback works? What brain formations are "talking to each other"?

Do We Have Freewill?

1. What is Sapolsky's opinion about free will? Why does he reach this conclusion?
2. Does he believe we make choices?
3. What type of influences determine the choices you make?
4. In the neuroscience process leading to our behavior, is there a "spot" for free will?
5. May change happen? Can we change ourselves? Can we be changed by circumstances?
6. Is striving to be a better human being is still a worthwhile endeavor?

TED Talk by Dr. Robert Sapolsky

Our Best And Worst Self (15 min)

1. How does Sapolsky describe himself when it comes to violence?
2. As a specie, do we hate violence? Explain
3. What is the hard part about understanding behavior?
4. What is true about any type of behavior? Simple or complex? Explain.
5. What brain region plays a key role in the second before a "behavior"?
6. How will the environment influence events that occur seconds before the behavior? Examples
7. What part of the brain is suppose to get to the amygdala before it may dictate the behavior?
    a. What may slow down this event?
8. How may the hours to days influence the behavior ?
    a. What mediates this period related to the behavior?
    b. How will elevated levels of testosterone influence how you recognize a face?
9. How may the weeks to months influence behavior?
    a. What mediates this?
    b. What type of events may do this?
    c. What two brain region changes to influence the behavior?
10. How may the behavior be influenced by events occurring years before the behavior?
    a. When is the frontal cortex fully "mature"?
    b. How may experiences during adolescence affect the frontal cortex?
11. How may going back to childhood, experiences years to decades before the experience be significant?
    a. What type of brain changes may occur at this age?
    b. As a consequence, what things may be turned off or turned on?
    c. When you were a fetus, if your mother was under a lot of stress then what be the size of your amygda la? Significance?
    d. Do genes really tell us anything about behavior?
12. How may events centuries old influence your behavior?
13. If we talk about genes as having the ability to influence a behavior, then what is the time scale going back?
14. What can we conclude about behavior?
15. Are humans able to have great changes in our behavior? Why, what changes? Example

Please Note: If you liked this talk then there is a more in-depth one hour lecture about this subject. You may find the link in the C14 resource section.