- Describe the three major divisions of the vertebrate brain and what each does, in general terms. How does the relative size of each region vary in different organisms?

- Are all regions of the brain required to sustain life?

- What are the two major divisions of the nervous system? What organs/nerves are part of each division?

- How are the efferent neurons of the peripheral nervous system subdivided?

- How is the autonomic nervous system subdivided? Generally speaking, what does each subdivision do? How do they work together?

- What is a synapse?

- What are the two types of synapse? How are signals transmitted in each type? What are the pros and cons of each?

- A particular neurotransmitter can only be excitatory OR inhibitory- true or false?
- What is an inhibitory postsynaptic potential? An excitatory postsynaptic potential? Explain what they are physiologically and what their effect on the neuron is.

- Generally speaking, what does acetylcholine do?
    - What are the two types of receptor that it can bind to, and what are the effects of binding to each one?
    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist? Name an example of each kind of drug (four total)
    - What do acetylcholinesterase inhibitors do?
- How do we end a signal that's being transmitted by a neurotransmitter (two ways)?
- What effect, generally speaking, does GABA have?
    - What type of receptor does it bind?
    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist?
- What effect, generally speaking, does glycine have?
    - What type of receptor does it bind?

    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist?

- How does a neuron integrate all of the neurotransmitter input from its neighbors and decide whether it should fire an action potential?

- What effect, generally speaking, does glutamate have?

    - What type(s) of receptor does it bind?

    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist?

- How does glutamate signalling play a role in learning and memory? (Hint: what does the term “long-term potentiation” mean?)

- What is the unique way that glutamate is removed from the synapse?

- What effect, generally speaking, does dopamine have?

    - What type(s) of receptor does it bind?

    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist?

- What effect, generally speaking, does serotonin have?

    - What type(s) of receptor does it bind?

    - What effect would a drug have if it was an agonist of each receptor? If it was an antagonist?
    - If a drug is a “serotonin reuptake inhibitor” (SRI), what effect would you infer from that term in terms of neurotransmitter levels and in terms of whole-organism effect?

- What effect, generally speaking, does nitric oxide have?
    - What types of receiver does it interact with?
    - What effect would a drug have if it was an agonist of this receiver? If it was an antagonist?