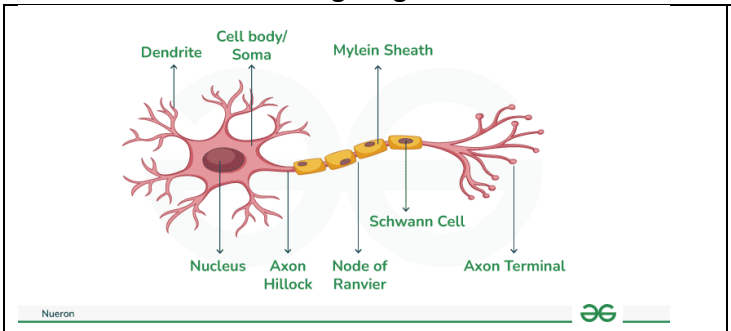
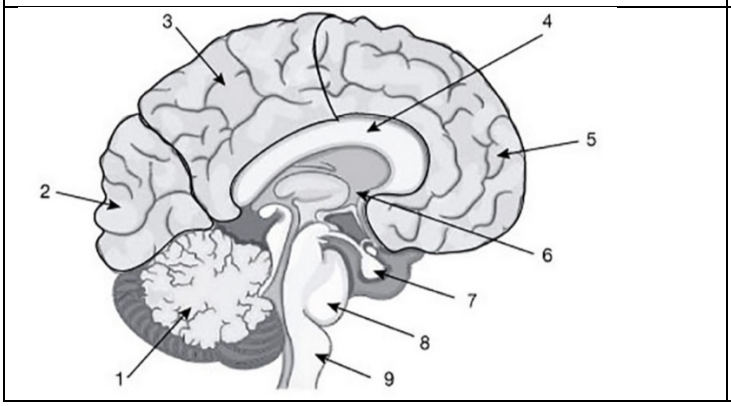
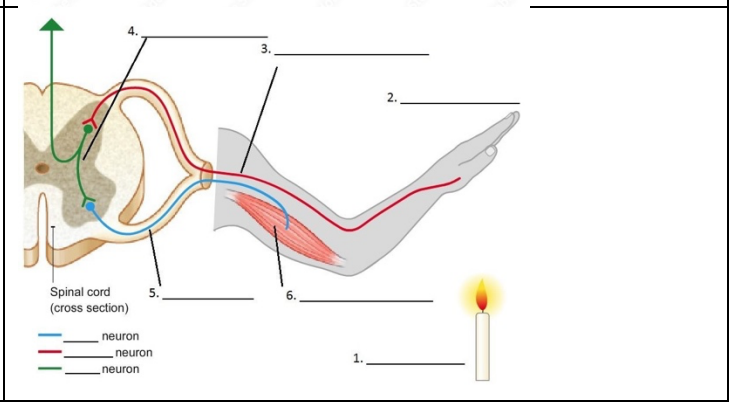
Nervous System Unit Review

1. Label the following diagrams







1: cerebellum, 2: occipital, 3: parietal, 4: corpus callosum, 5: frontal, 6: hypothalamus, 7: pituitary, 8: pons, 9: medulla

1: stimulus, 2: receptor, 3: afferent (sensory) neuron, 4: interneuron, 5: efferent (motor) neuron, 6: effector

2. Matching: Nerve structure

A. Cell bodies. B. synaptic terminals. C. dendrites. D. axons
1. __D__ carry action potentials to output terminals 2. __A__ the cell's integration centre 3. __C__ receive information from the environment 4. __B__ sites where signals are transmitted to other cells 5. __A__convert environmental information into electrical signals 6. __D__bundled together into nerves 7. __C/A__ initiate action potentials

3. Matching: Nerve functions

A. Threshold. B. action potential. C. resting potential. D. depolarization. E. repolarization
1. _C___ always negative (around -70 mV) within a nerve cell 2. _D___ a sudden positive charge within a nerve cell 3. _A___ minimum change in voltage required to send action potential 4. _C___ only sodium potassium pumps working 5. _E___ due movement of potassium out of axon 6. _D___ opening of more voltage gated sodium channels 7. _B___ moving depolarization of a nerve cell

4. Matching: Autonomic nervous system

A. Sympathetic system. B. parasympathetic system. C. both systems. D. neither system

1. _A___ prepares for fight or flight responses
2. _C___ conducts messages between the environment and central nervous system
3. _A___ speeds up heart rate
4. _B___ associated with rest and digest activities
5. _A___ dilates (opens up) pupils
6. _B___increases urine and saliva production

5. Matching: Human Brain

A. Cerebellum. B. cerebrum. C medulla. D. brain stem

1. _A___ hindbrain
2. _C___ controls several autonomic functions (D – pons)
3. _B___ forebrain
4. _D___ receive input from all sense organs and "decides" which require attention
5. _B___ controls learning, emotions and autonomic nervous system
6. _B___ largest part of the brain
7. _B___ ability to problem solve
8. _B___ musical skills

6. Matching: Synapses

A. Axon terminal. B. dendrite. C receptor. D. neurotransmitter. E. cleft

1. _A___ location neurotransmitters are stored
2. _B___ location of ligand gated sodium channels
3. _A___ location of reuptake pumps
4. _A___ where action potential comes from
5. _E___ gap between neurons
6. _D___ inhibitory or excitatory

7. How are excitatory and inhibitory neurotransmitters different?
   EPSP – less negative/closer to threshold IPSP – more negative/farther from threshold
8. How are temporal and spatial summation different?
   Temporal – one presynaptic neuron causing multiple stimuli, stimulus effect added together
   Spatial – two or more presynaptic neurons acting on same post-synaptic neuron, stimulus effects added together
9. How are reflexes different than conscious thought?
   Are not processed by the brain, reflex arc into spinal cord and back out
10. How are white and grey matter different?
    White – myelinated, can heal Grey – non-myelinated, cannot heal
11. How are afferent and efferent nerves/pathways different?
    Afferent – towards CNS, sensory neurons Efferent – away from CNS to effector, motor neurons
12. How are depolarization and repolarization different?
    Depolarization – upshoot in action potential, fast influx of Na+ ions
    Repolarization – downward portion of action potential graph, fast efflux of K+ ions
13. How are absolute and relative refractory periods different?
    Absolute – cannot send another AP, during depolarization & repolarization
14. How are somatic and autonomic nervous systems different?
    Somatic – conscious thought
    Autonomic – involuntary control
15. How are the cerebellum and cerebrum different?
    Cerebellum –coordination & balance
    Cerebrum – higher order thinking & processing, motor & sensory control
16. How are frontal and temporal lobes different? functions
    Frontal – personality, problem solving, emotions,
    Temporal – auditory, memory, language comprehension