1. Dominant vs recessive inheritance
    a. Dominant Dd/dd
    b. Recessive dd
2. Genes vs chromosomes
    a. Genes are what make up chromosomes
    b. Chromosomes are made up of genes, x shaped
        i. 23 pairs
3. PKU
    a. Genetic disease
    b. Cause by a buildup of phenylalanine
    c. If not treated the amino acid can build to levels that can be deadly
4. Why study animals and minimalists views
    a. Animals are similar to humans
    b. We can learn about diseases in humans by studying them in animals
    c. Minimalist views
        i. Believe that animals have the same rights as humans and we should not test on them
5. Neurons
    a. Dendrites- branching fibers
    b. Cell bosy
        i. Contains nucleas ribosomes, and mitochondria
    c. Axon
        i. Thin fiber of constant diameter
        ii. Afferent axons
            1. Brings information into a structure
        iii. Efferent axons
            1. Carries information away
6. Glial cells
    a. Oligodendrocytes- glial cells in the brain and spinal cord
    b. Schwann Cells- glial cells in the PNS
    c. Insulate axons
7. Blood brain barrier
    a. Blood is not in the brain
    b. Molecules can move into the brain but only very small ones
    c. Helps prevent spread of diseases in the brain

8. Thiamine deficiency
    Korsakoff's disease
    Caused by heavy drinking
    Memories can't be made

9. Electrical Gradient
    Must reach action potential of 40 millivolts
    Caused by diffusion NA+ ions pour into axon causing depolarization
10. Resting Potential
    -70 millivolts

11. Action Potential
    - 40 millivolts
    - All or none reaction
    - Skip from one node of Ranvier to another
    - When reaches the end it causes contents of vesicles to pour into the synapse
12. Local anesthetics
    - Inhibit action potentials
    - Close sodium channels
13. Nodes of Ranvier
    - Spaces in between myelin
14. Myelin destruction
    - Increased destruction causes MS
15. Depolarization vs. Hyperpolarization
    - Depolarization- increasing of charge in axon
    - Hyperpolarization- going below the normal resting action potential
16. Prefrontal cortex damage
    - Causes a change in personality
    - Loss of willpower, control
    - Socially awkward
17. EPSP IPSP
    - Excitatory postsynaptic potentials
        - Make AP's more likely
    - Inhibitory postsynaptic potentials
        - Make AP's less likely
18. Catecholamine types
    - Affect blood pressure by acting on the blood vessels and the heart
        - Epinephrine
        - Norepinephrine
        - Dopamine
19. Acetylcholine agonist
    - Nicotinic receptors – agonist nicotine
    - Muscarinic Receptors- agonist muscarine
    - Causes more uptake of the neurotransmitter
20. Acetyl cholinesterase
    - Deactivates acetylcholine
21. Reuptake
    - Taking up the excess neurotransmitter into presynaptic neuron
22. Agonist vs. Antagonist
    - Agonist
        - Initiates the same receptor response as the neurotransmitter
    - Antagonist
        - Blocks receptors from taking the neurotransmitter
23. Function of Neurotransmitter and Drug associated with
    - Used to stimulate a response in the brain
    - Cocaine prevents reuptake of catecholamine
    - Caffeine blocks adenosine receptors

24. Parts of CNS
    - Brain
        - Covered by a membrane called the meninges
            - Duramatter, arachnoid layer, pia matter
    - Spinal Cord
        - Protected by spine
25. Divisions of PNS and functions
    - Somatic Nervous system
        - Carries sensory information from skin, muscles, joints
        - Connects voluntary muscles to CNS
    - Autonomic nervous system
        - Nerves of heart, blood vessels, glands
        - Sympathetic nervous system mobilizes body's resources for emergencies
            - Parasympathetic nervous system allows body to conserve resources
26. Directions in nervous System
    1. Neuroaxis: an imaginary line through the spinal cord to the front of the brain
    2. Anterior or rostral: toward the head or front of the brain
    3. Posterior or caudal: toward the tail or back of the brain
    4. Dorsal: is the back & top of the head
    5. Ventral: faces the ground in 4 legged animals
    6. Ipsilateral: refers to structures on the same side
    7. Contralateral: refers to structures on the opposite side
    8. Lateral: toward the outside
    9. Medial: toward the middle
27. Wrinkles and Bulges on the Cortex
    - Sulci-small groves
    - Fissures- large groves
    - Gyri-bulges
28. Functions of brain areas
    - Hindbrain
        - Medulla oblongata
            - Life sustaining activities
            - Connected to spinal cord
        - Pons
            - Bulge in the brainstem
            - Cerebellum strapped to dorsal side
    - Midbrain
        - Eye reflexes
        - Hearing
    - Forebrain
        - Thalamus
            - Sensory information
                - Eyes, vision, hearing
        - Hypothalamus