Introduction to Psychology CLEP

Some good websites:s
https://courses.edx.org/
https://oli.cmu.edu/courses/introduction-to-psychology-open-free/
Practice test: http://www.nelnetsolutions.com/pdf/clep_psychology_q_print.pdf
Answer key: http://www.nelnetsolutions.com/pdf/practice_tests/ClepPsychologyA.pdf

Notes

- Psych- mind, spirit, soul
- Psychology is the scientific study of human behavior (actions you see) and mental processes (thoughts, emotions, impulses).
- Structuralist
    - believes in the consciousness
    - William Wundt (1832-1920),
    - made up of different elements that were combined in different ways to produce perceptions
    - Wanted to discover the form, or basic elements, of mental experience
    - Used introspection: internal perception, a process by which someone examines their own conscious experience as objectively as possible
        - It was a subjective way and couldn't be used on children or animals
    - To understand the structure or characteristics of the mind
- Functionalism:
    - The function of human condition or behavior
    - How mental experiences or processes were adaptive, or functional, for people
    - Believed that consciousness, and behavior in general, helped people and animals adjust to their environments
    - William James
    - Relied on objective measures
- Biological Approach:
    - Physiological and biochemical explanation of behavior (genes, hormones, and neurotransmitters)
    - Studying behavior focus on understanding how physiological and biochemical processes might produce a psychological phenomena
- Behavioral Approach:
    - Responding to our environment
    - In term of learned responses to predictable patterns of environmental stimuli
    - Classical conditioning
    - Operant conditioning
    - Pavlov and Skinner
- Psychodynamic Approach:
    - Unmet needs from childhood affects personality

    - Thoughts, feelings and behaviors stem from interaction of innate drives and society's restrictions on the expression of those drives
    - Also known Psychoanalytic
    - Sigmund Freud: the most important urges are the sexual and aggressive ones
    - Later they focused on attachment and interpersonal connection as a primary drive
    - The role of a persons unconscious
    - ID, is the biological part of the personality, it operates according to the pleasure principle
        - Do what feels good, do it now
    - EGO,is the rational, realistic part of our personality. It involves problem solving and reasoning. Operates according to the reality principle
        - Do what will get your needs met effectively, efficiently, and without getting yourself hurt.
    - SUPER-EGO, the social part that allows us to get along with other people, operates according to the morality principle
        - Do what is right, and don't do what is wrong.
    - Free association
    - Self-Discovery
    - When there is conflict between the id, ego, and superego, anxiety is the result.
    - Psychosexual Stages: develops fixations
        - Oral stage, birth to two years old
        - Anal stage, 2-4 years,
            - Anal retentive: like to have things in order, get pleasure from putting off until last minute
            - Anal expulsive: messy and rebellious
        - Phallic stage: 4 years
            - Boys feel castration anxiety, and has an Odipus complex
            - Girls have penis envy
- Cognitive Approach:
    - Behavior results of feelings and thoughts
    - Resulted as a reaction against behaviorism
    - Studies problem solving, attention, expectation, memory, and other thought processes
- Humanistic Approach:
    - Motivated by the desire to grow and develop
    - Believe that people aren't merely machines whose behaviors are determined for them by a genetic code, a conflicted childhood, brushes with stimuli, or cold mental calculations
    - Emphasized the potential for good that is innate to all humans
    - Maslow and Rogers
    - True self is the talents, thoughts, desires, and feelings a person has.
    - Self-concept is what we think we are like.

    - Ideal self is what we would like to be.
    - If in conflict or incongruence, there will be anxiety.
    - Self-actualization: accepting who you are as part of your self-concept and adjusting your ideals to reflect that so you can be all you can be.
    - Conditions of worth is what throws us off self-actualization, however unconditional positive regard is needed to get back on.
- Social- Cognitive Approach:
    - Reciprocal determinism: how people think, how people behave, and what their environment is like all interact to influence the consistency of behavior.
- The Individual-Difference (or Trait) Approach:
    - It is measuring the many ways in which people differ, reducing those many ways down to a more manageable subset, and using measurements of those characteristics to predict actual behavior
    - Traits: consistent patterns of behavior
    - Measured by self-report questionnaires
    - Approximately 18,000 trait terms
    - The Big Five personality traits uses factor analysis to identify for which scores correlate highly with each other
        - Openness: inquiring, independent, curious
        - Conscientiousness: dependable, self-controlled
        - Extraversion: outgoing, social adaptive
        - Agreeableness: conforming, likable
        - Neuroticism: excitability, anxiousness
- Experimental Approach:
    - Cause and effect
    - Independent variable: what is manipulated(cause)
    - Dependent variable: what is measured (effect)
    - Experimental Group: exposed to the cause
    - Control group: not exposed to the group (helps to set standard)
    - Random assignment: randomly selecting so no bias
    - Blind/Double-Blind: one or neither party is aware
    - Placebo and placebo effect: fake cause but because they believe there is a measurable response
- Clinical:
    - Case Study:in-depth analysis of only one person
        - Freud's theory of psychoanalysis was built on a series of these
    - Naturalistic Observation: behaviors that are studied as they occur in real-life settings
        - Two things to be aware of when performing this type of study is being unobtrusive(not interfering with ongoing behavior) and having a high agreement among observers as to what is happening.
            - Agreement among observers is a measure of "inter-judge", "inter-rater", or "inter-observer" reliability

    - Clinical Interviews: talking with an individual in a clinical setting
- Correlational studies:
    - how two variables relate to each other
    - does not measure cause and effect
    - Positive(+1), negative(-1), neutral (0), shows the strength of the correlation
- Survey:
    - self-reporting,
    - subject to bias
    - Is about a person's opinion, attitudes, or behavior
- Participants must be treated morally and respectfully
- Must always clearly state purpose, duration, and process
- Informed consent must be given, and any possible harm or adverse effects must be told beforehand.
- Behavioral neuroscience:
    - concerned with how the communication between the body and its parts (the brain, muscles, glands, organs, nerves, arms, legs, and etc)
    - Deals largely with nervous system
        - An organization of neurons, neurotransmitters, and brain structures that serves as the framework for moving information throughout the body
- Sense receptors: detect heat, or light, or touch and then pass information about those stimuli on to the brain, thereby triggering thoughts about those things and/or causing behavioral responses to occur
- Neurons(nerve cells):
    - Pathways for communication
    - Three types
        - Sensory (afferent neurons): take in information from body tissues and sense organs, and transmit it to the spinal cord and brain
        - Motor (efferent): sends information in the opposite direction
        - Interneurons (association neurons): neurons that communication with other neurons
    - Consists of:
        - Cell body: contains structure to help keep the cell alive and functioning
        - Dendrites: short, bushy fibers that take information in from outside the cell
        - Axons: relatively long fibers that pass information along to other nerve cells, to glands, or to muscles
        - Myelin sheath: fatty tissue that the axon and accelerates transmission of information
    - Through the use of electrical impulses (action potentials)
        - Travels down the axon and triggers activity in whichever neuron, muscle, or gland that is connected to the axon
        - Chemically generated by the axon containing predominantly negatively charged ions

        - Resting potential: polarized due to the fact the fluid on the outside of the axon is mostly positively charged, -70 mv
        - Refractory period:the neuron pumps out the sodium ions, and can fire again
- Synapse: the junction where the end of one neuron meets the beginning of another
    - The gap which is less than one millionth of an inch is the synaptic gap
- Neurotransmitters:
    - Chemical molecules contained in vesicles within the axon terminal
    - Released into the synaptic cleft
    - Bind to receptor sites on the next neuron's dendrites
    - Excess is either broken down due to enzymatic degradation or absorbed through reuptake
    - Serotonin:
        - helps control arousal and sleep
        - Low levels cause depression
    - Agonists:
        - drugs that mimic a particular neurotransmitter or
        - Make more of it available by blocking reuptake
    - Antagonists:
        - Drugs that block a neurotransmitter's receptor site or
        - inhibits its release
- Central Nervous System:
    - Spinal cord:
        - Enables reflexive behavior
        - Relays information to the brain from elsewhere in the body
    - Brain: controls physiological and psychological functions
- Peripheral Nervous System:
    - Includes the sensory and motor neurons that connect the brain and the spinal cord to the rest of the body
    - Divided into two systems
        - Somatic nervous system:allows you to operate in the external environment
            - Carries information from muscles, sense organs, and skin to the central nervous system
                - The sensations of pressure, pain, and temperature
            - Carries messages from the central nervous system to skeletal muscles
                - Allowing for voluntary movement
        - Autonomic Nervous System: regulates the body's internal environment by controlling the functioning glands, organs, and some muscles
            - Done consciously or involuntarily
            - Divided into two divisions
                - Sympathetic nervous system: prepares you for action

        - Can quicken your heartbeat, slow digestion, raise the levels of blood sugar, widen arteries, and stimulate sweat gland
    - Parasympathetic nervous system: deactivates the systems mobilized by the SNS
        - Operates during states of relaxation
        - Can decrease heart rate, breathing rate, and digestives functioning
- Neural Networks: groups of neurons that serve similar functions
- Brainstem:
    - Oldest region of the brain
    - Begins where the spinal cord enters the skull
    - Controls breathing and heartbeat
- Thalamus:
    - Sits on top of the brain stem
    - Receive information about touch, taste, sight, and hearing
    - Sends information to higher regions of the brain
- Reticular Formation:
    - Runs through the brainstem and the thalamus
    - Controls arousal and sleep
    - Filters incoming stimuli
    - Sends information to other parts of the brain
- Cerebellum:
    - At the rear base of the brainstem
    - Controls the coordination of voluntary movements
- Limbic System:
    - Sits between older parts and the evolved cerebral cortex
    - Contains several structures
        - Hippocampus: processes memory
        - Amygdala: influences fear and anger
        - Hypothalamus: influences hunger, thirst, and sexual behavior
            - Controls the Pituitary gland
                - Master gland
                - Influences the release of hormones from other glands
- Hormones:
    - Chemical messengers
    - Produced in one kind of tissue
    - Travels through the bloodstream
    - Affects the function of other tissues
    - Helps make up the endocrine system
- Cerebral Cortex:
    - Outer covering of the brain
    - Involves motor, cognitive, and sensory processes

    - Divided into two hemispheres: left and right
    - Divided into four regions
        - Frontal lobes
            - Just behind the forehead
            - Plays a part in coordination and higher level thinking like planning and predicting the consequences of behavior
            - Involved in speech
                - Damage to Broca's area will cause someone to understand speech but to only speak slowly and with difficulty
                - Damage to Wernicke's area will cause someone to physical speak, but string together meaningless words
        - Parietal Lobes
            - Top of the head, behind the frontal lobes
            - Involves sense of touch
            - Allows us to know where our hands and feet are and what they are doing
        - Temporal Lobes:
            - Above and on either sides of the ears
            - Involved in hearing
        - Occipital Lobes
            - Base of the skull
            - Involved with vision
- Sensation: transforming energy from outside stimuli into neural energy
- Perception:
    - involves mentally creating an image of the outside world
    - Constructing meaning out of sensation
- Psychophysics: area of psychology that addresses the topics of sensations
    - Includes the level of intensity in which we can detect stimuli
    - How sensitive we are to changes in stimulation
    - How psychological factors influence our ability to sense stimuli
- Signal Detection Theory: our ability to notice a stimulus will vary due to psychological factors
    - Factors include: motivation, past experience and expectations.
- Absolute Threshold: the minimum stimulation needed for a given person to detect a given stimulus
- Difference Threshold (Just Noticeable difference): the smallest difference a person can detect between two stimuli
- Weber's Law: the threshold of just noticeable difference increases in proportion to the intensity or magnitude of the stimulus
    - Harder to notice difference with more intense, powerful stimuli than weaker ones
- Selective Attention: the amount of information we can hold in our awareness is less than the information available from our environment

    - Illustrates that our ideas about reality have to be chosen organized, and interpreted, not just detected
- Sensory Adaptation: when the nerves cell involved in detection fires less frequently and our sensitivity to the stimulus diminishes despite the fact that exposure is unchanging
    - Predisposes us to attend to stimuli that matters and ignore the ones that don't
- Gestalt psychology:
    - First to formulate rules in which the brain pieces together meaningful experiences out of fragments of sensation
    - Our minds fill in the gaps of our sensations
- Depth Perception:
    - What allows us to estimate distance between ourselves and the object we see
    - Helps us to see in three dimensions(perception) despite the fact that the images on our retinas are in two dimensions (sensation)
    - Uses two types of cues
        - Binocular cues
            - Uses two eyes
            - Retinal disparity: cue to determine distance
            - Convergence: the extent to which your eyes must turn inward, tell how close an object is
        - Monocular cues
            - Requires one eyes
            - Linear perspective: parallel lines appear to convergence as they get farther away
            - Motion parallax (relative motion): apparent movement of stable objects as we ourselves move
                - Fixation point: the point in which you focus on that tends to appear to move
            - Interposition: when one object partially blocks out another, so that we perceive it as closer
            - Texture gradients: objects that are clear appear with more distinct texture while objects farther blend into an indistinct fine texture
        -
- Critical period: period where exposure to appropriate stimuli is required in order for the various perceptual skills to develop
- Sensory restriction: that perceptual skills are largely wired in to our brains but to some extent, our experiences shape our perception
- Perceptual sets: predispositions to perceive one thing and not another
- The general principle: processing information about the environment occurs in two ways
    - Bottom up: from simple sensory receptors to more complex neural networks
    - Top down: from expectations, motives, and contextual cues to raw sensory data
- Consciousness: the state of being aware
- Circadian rhythm:

    - Hormones levels, body temperature, and wakefulness rise and fall in predictable ways during the course of the day
    - Their predictability stems from their being synchronized with the parts of the day
- Sleep
    - Brain waves and their quality of sleep, cycles through a series of five stages every 90 minutes
    - Each stage is distinguished by the typed and appearance of brain waves
        - Brain waves are electrical currents on the brain as shown graphically on an EEG
        - In an awake but relaxed state, the brain produces alpha waves
            - Relatively slow and regualar
        - Once asleep, stage 1 begins
            - Slower breathing
            - Irregular relatively erratic brain waves
            - Hypnogogic sensations may occur
                - Like falling or floating,
                - Having to do with drowsiness
            - Delta waves
        - Stage 2
            - Lasts about 20 minutes
            - Involves deeper relaxation
            - Sleep spindles
                - Occasional bursts of rhythmic brainwaves
            - K-complexes
        - Stage 3
            - Produces delta waves as large, slow waves
        - Stage 4
            - Stronger, more consistent delta waves
        - Stage 3 and 4 are the slow wave sleep
            - Last 30 minutes
            - And hard to wake from
        - REM (rapid eye movement)
            - 10 minutes
            - Brain waves are similar to stage 1
            - Breathing is more rapid and irregular
            - Heart rate increases
            - Eyes dart back and forth
            - Dreams occurs
            - Paradoxical sleep: the brainstem blocks messages from the motor cortex
- Insomnia: recurring difficulty in falling asleep or staying asleep
- Narcolepsy
    - sudden and uncontrollable attacks of sleep during waking hours

    - May fall straight in REM
    - May lose muscular tension
- Sleep apnea
    - Stops breathing intermittently during sleep
    - The lack of oxygen wakes them up to gasp for air
    - Can happen hundreds of times a night
- The manifest content: the images that actually appear to the dreamer
- The latent content: usually a “forbidden” sexual or aggressive wish that the dreamer would repress if awake
- Activation-synthesis: the brain’s neurons fire randomly during sleep, and upon waking we construct a dream to make sense out of the random images that have been generated
- Information-processing: that dreams are the way to consolidate information
- REM rebound: making up for lack of REM sleep at a later date
- Hypnosis:
    - An induced state of consciousness
    - Characterised by deep relaxation and heightened suggestibility
    - Heightened state of motivation
    - One theory: People are fulfilling social roles
        - Behaving the way they think the hypnotist wants them to behave
    - Second theory: dissociation
        - A split in consciousness which allows the person to become aware of his or her activities while under hypnosis
- Psychoactive drugs
    - Produces a state of consciousness that is different from “normal” consciousness by mimicking, inhibiting, or stimulating the activity of neurotransmitters
    - Three types
        - Depressants: slow down body functions and neurological activity
            - Includes alcohol, barbiturates, and opiates
            - They slow down the sympathetic nervous system
        - Stimulants: increase neural activities and body functions
        - Hallucinogenes: distort perceptions and produce sensations that have no physical basis
- Learning
    - How predictability of events can change your behavior
    - Involves accommodating an event that is probably going to happen
    - As an enduring or relatively permanent change in an organism caused by experiences or influences in the environment
        - Experience: earlier events that influence the way an organism behaves in the present
    - Stimulus: any factor in the environment that causes a reaction
    - Response: any reaction by an organism, either voluntary or involuntary
    - Much about learning was discovered by behaviorist

- Two types of learning
  - Associative Learning:
    - Involves a relationship either between two stimuli or between a response and a stimulus
    - Classical conditioning: produces changes in responding by pairing two stimuli together
      - Reflexive behavior
      - Unconditioned stimulus already produces the response of interest (the unconditioned response)
      - Neutral stimulus: one that wouldn't automatically produce the unconditioned response
        - It becomes capable of producing the unconditional response
      - When it produces the unconditioned response the neutral response becomes the conditioned stimulus
      - The conditioned response is the response that is now produced
      - Expectation: the US will show up after the CS
        - Conditioned responses can be thought of as preparatory responses as they prepare organisms for the US and the UR
      - Extinction: if the CS is repeatedly presented without the US, the CR will go away
        - The US no longer follows the CS
    - Operant Conditioning: learning an association between a response and a stimulus that follows it (predictably)
      - Called instrumental conditioning because the response is "instrumental" in making a stimulus occur
      - Frequency will increase or decrease depending on the quality of the consequence (pleasant or unpleasant)
        - The consequences of behavior affects how often it will be performed
      - Reinforcement: something pleasant happening as a way to increase the behavior
        - Positive reinforcement: presenting a stimulus that will feel good to have like a treat
        - Negative reinforcement: removing a stimulus (or simply prevententing it from occurring) that would feel bad to have like taking an aspirin
      - Punishment: something unpleasant happening, to decrease a behavior
        - Can be called response-cost training

            - Positive punishment: involves the appearance of an unpleasant stimulus
            - Negative punishment: involves the removal of a pleasant stimulus
        - Reinforcement Schedules: rules for determining when reinforcement will be given
            - Ratio Schedules: how many times a response has been made
                - Fixed ratio: would be on the every __ turn
                - Variable ratio: the average number of turns
            - Interval Schedule: the amount of time that has passed since the most recent reinforcement
                - Fixed Interval: time wise(after every __ seconds/minutes/hours)
                - Variable Intervals: the amount of time between getting reinforcers and the next one changes
        - Extinction: when a stimulus that used to show up predictably after a response doesn't follow it anymore
        - Baseline level: the frequency with which it happened prior to conditioning
    - Observational learning: we can learn operant behaviors indirectly
        - Models: those we watch to learn a behavior, usually by watching the punishments and reinforcements they receive
- Non-Associative Learning:
    - Occurs when repeated encounters with a stimulus produces an enduring change in behavior
    - Habituation: repeated presentations of a stimulus eventually reduce the likelihood or intensity of response to that stimulus
    - Sensitization: repeated or long-lasting presentation of an intense stimulus increases the response to a second , weaker stimulus
- Cognition: the mental activities involved in solving problems
    - Thinking
        - Heuristics: shortcuts as a way to solve problems with minimal effort
            - Representative Heuristic: comparing the likelihood of one event happen by looking at a similar or "representative" one
            - Availability Heuristics: judging the likelihood that an event will happen in terms of how readily you can bring an instance of it to mind
        - Confirmation Bias: people's tendency to look for information that will support their beliefs
        - Functional Fixedness: the inability to see new uses for familiar objects
    - Language:

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    - Grammer: a system of rules for language so people can make sense out of what it means
    - Semantics: rules for mapping morphemes onto the ideas they represent
        - Morphemes: words, or part of words that convey meaning
    - Syntax: rules for combining morphemes in meaningful ways
    - Babbling stage:
        - Starts at four to six months in age, lasts until their first birthday
        - Appear to be practicing sounds in their language
        - Lasts until their first birthday
        - Their ability to recognize sound in other languages increase and the occurrence of such sounds decreases
    - One-word stage:
        - Starts at one years old, lasts until 18 months
        - Word is accompanied by gestures that convey added meaning
            - Telegraphic speech
    - Two-word stage
        - Combines nouns and verbs
        - Then adjectives and nouns
    - Language development in terms of operant conditioning principles were made by B.F Skinner
    - Noam Chomasky claimed children have a language acquisition device
        - A universal, built-in mental system that steers us towards interpreting and using language in particular ways
    - Others have proposed that the neural complexity of our brains allow children to analyze their experiences with language statistically and thereby determine which word orders are acceptable
- Memory: the ability to store information and retrieve it again
    - Sensory memory: a fleeting awareness of whatever the senses have detected, if attended to can be moved to short-term
    - Short-term memory: (working memory) information that can be kept long enough to solve problems, lost after unless transferred to long term
    - Long-term memory: unlimited, and perhaps permanent, storehouse of memories
    - Mnemonic strategies:deliberate, though sometimes automatic and unconscious, methods used for getting information into long-term
        - Rehearsal: deliberate conscious repetition of information
        - Chunking: grouping pieces of information into meaningful units
- Intelligence: how well you solve problems
    - Psychological perspective it begs 3 questions
        - How can the ability to solve problems be summed up in a single score that can be used to predict others behavior and characteristics?

            - Since there are different kinds of problems to solve, are there also different kinds of intelligence?
            - Why do people differ in their problem-solving abilities?
        - Alfred Binet: developed the first intelligence test
            - A bunch of question
            - Showed a person's mental age
                - The chronological age that corresponds to a given level of performance on the tes
            - Intelligence Quotient (IQ): mental age/ chronological age(physical age) X 100
                - Standardization or norms-based referencing: comparison of test taker score to the average for their age
        - Charles Spearman: labeled this general intelligence, intelligence that is a single, unitary skill underlying people's ability to solve all sort of problems, "g"
        - Multiple Intelligence: separate, distinct problem solving abilities
            - Analytical Intelligence: ability to perform well on math problems
            - Practical Intelligence: work out problems in personal relationships
        - Nature vs Nurture
            - Nature: biological, genetic heritage
            - Nurture: environmental effects on development
            - Differences in IQ score are probably a result of an interaction between nature and nurture
- Motivation: the psychological process that energizes and directs behavior
    - Activating Behavior and steering it towards a goal
    - Many motives serve biological functions
        - Getting food, getting water, and reproducing
    - Most important motives serves primarily social-psychological goals"
        - Affiliation, achievement, and maintaining a favorable self image
    - Hunger: illustrates how both biological and social-psychological factors impact the occurrence and expression of a motive
        - When you eat foods containing sugar, digestion starts and sugar is released as glucose into the bloodstream. This triggers the response of insulin in the pancreas, which reduce the glucose levels, causing you to become hungry to replenish those levels.
    - Hypothalamus: the part of the brain that monitors hunger-related signals
        - Ventromedial hypothalamus: responsible for stopping hunger (lower middle portion)
        - Lateral hypothalamus: responsible for increasing hunger (sides of the hypothalamus)
    - Set point: the weight our own bodies works to maintain
    - A social-psychological factor of hunger for example is Anorexia Nervosa and Bulimia Nervosa.

    - Externals: becomes hungry when external cues tell them to eat
        - Smells or time of day
    - Internals: rely on bodily cues
        - Hunger pangs, and glucose levels
- Emotions
    - Helps us to deal with the impacts our motives, goals, and values create
    - Can be sources of motivation
    - Basic level emotions
        - Anger, Sadness, Joy, Fear and Love
        - Wired into our nervous system
        - Blended emotions are learned
    - All emotions involve some part of physiological arousal (like increased or decreased heart rate), behavioral expression (running or punching), and conscious experience (“I feel agitated”).
    - Cannon-Bard Theory: perceiving a stimulus that relevance to one’s well-being will generate arousal and a subjective emotional experience simultaneously
    - James-Lange Theory: the perception of a stimulus causes arousal first, which then causes me to feel an emotion
        - Facial feedback hypothesis: the activity of facial muscles tells us whether we’re happy or not
    - Two-Factor Theory: the quality of an emotional experience depends on how arousal is labeled
- Developmental psychology: deals with systematic, predictable changes in thinking and behavior over the lifespan
- Cross-sectional studies: comparing people of different ages at the same point in time
    - Major problem: age is confused with cohort
        - Cohort: a group of people born during the same period of time
- Longitudinal Studies: involves tracking the behavior of a single cohort over a log period of time
- Cross-sequential studies: people of different ages are followed over a long period of time
    - Helps determine if caused by age, with cohorts, or with the time of testing
- Piaget’s theory of cognitive development:
    - Describes how children’s thinking change as they get older
    - During sensorimotor stage,
        - children can only think in terms of what they sense and what they can do with those senses.
        - They lack object permanence: the ability to understand that objects exist even when they cannot see it
        - Age 0-2
    - During pre-operational stage,
        - They develop object permanence
        - Use intuitive reasoning

        - Struggle with conservation: the understanding that some quantitative aspects of objects (mass,volume, weight, number) don't change because of its appearance
        - Egocentric: trouble seeing from another's point of view
        - Age 2-6
    - During concrete operational stage,
        - Think logically about direct experiences or things that can be easily imagined
        - Can solve conservation problems
        - Acquired conservation
        - Age 6-12
    - During formal operational stage,
        - Think scientifically, abstractly,
        - apply logical rules to envision what they haven't seen
        - Age 12+
    - Disequilibrium: A child understands the world in one particular way and they then see something that happens that can't fit into that understanding, In order to make sense out of what has happened, the child has to change the way he or she understands the world.
    - Scheme: an understanding of how some aspects of the world works
    - Assimilation: understanding events in terms of current schemes
    - Accommodate: changing understanding to more accurately reflect the way the world works
    - Logical rule: changing the scheme to understand
- Erikson's theory of psycho-social development
    - Relies heavily on the idea that tension or disequilibrium is necessary for change
    - People go through different types of Crises depending on their age
        - Trust vs Mistrust, 0-1 years, Dependence on others: Are others reliable?
        - Autonomy vs Doubt and Shame, 1-3 years, capable of self-control: allowed to exercise it?
        - Initiative vs Guilt, 3-5 years, can set goals; is that encouraged?
        - Industry vs. Inferiority, 6-11 years, can reason, like success; praised and taught?
        - Identity vs Role Confusion, 12-18 years, can reflect on identity and consider multiple roles; willing to make an effort to integrate all those roles?
        - Intimacy vs Isolation, 18-35 years, ready to break away from family and form new intimate relationships; willing to share yourself?
        - Generativity vs Stagnation, 36-55 years, kids are gone-you're free; show interest in others?
        - Integrity vs Despair, 55+ years, reflecting on your life; accept it all?
- Abnormal Psychology
    - The branch of psychology that deals with psychological disorders

- 300 disorders are characterized by the DSM-IV and DSM-V
- Anxiety Disorder: a class of disorders involving inexplicable or unusual feelings of dread, fearfulness, or terror
    - General Anxiety Disorder: persistent anxiety, but unaware of its source
        - Accompanied by physical symptoms of sweaty palms, shaking, or nervous habits
    - Panic disorder: unpredictable, minutes-long episodes of terror that have a sudden onset
        - Panic attacks are accompanied by racing heart, breathlessness, dizziness, and other signs of intense fear
    - Phobias: intense and irrational fears of specific objects or events
    - Obsessive- Compulsive disorder: repetitive thoughts (obsessions) that provoke anxiety and repetitive behaviors (compulsion)
- Mood disorders: characterized by depression, mania, or both
    - Major depressive disorder: feelings of sadness, hopelessness, lack of interest in pleasuarable activities and discouragement lasting at least 2 weeks
    - Bipolar disorder: swings between states of mania and depression
        - Mania: a heightened state of excitement and risk-taking optimism
- Dissociative Disorders: feature the fragmentation of personality, behaves as if one part of their experience is separated from the other parts
    - Dissociative amnesia: unable to remember personally relevant information
        - Brought on by stressful events
    - Dissociative fugue: travels away from home or work suddenly and unexpectedly. Can't recall past and is confused about identity
    - Dissociative identity disorder: characterized by the expression of 2 or more distinctly different identities from the same person
        - Is only controlled by one identity at a time
        - Usually doesn't know or remember personal information associated with other identities
- Schizophrenia: disorders including symptoms of psychosis, have problem distinguishing between false and reality
    - Hallucinations: false sensations that include hearing voices that aren't there or seeing objects that don't exist
    - Delusions: false thoughts
    - Types of Schizophrenia
        - Paranoid: exhibit delusions of grandeur (believing themselves to be important) or delusions of persecution (believing that they will be harmed by others)
            - Often have auditory hallucinations that reinforce the theme of their delusions

- Disorganized: disorganized speech or behavior, and inappropriate emotional responses
- Catatonic: odd motor activity
    - May be excessively active and agitated, or immobile
    - Can have waxy flexibility: which they put their limbs in some position and leave them there for long periods
    - Echolalia: senselessly repeating back words someone else just said
    - Echopraxia: repeating others movements
- Undifferentiated: can have symptoms of all but not meeting the specific criteria for one

- Somatoform Disorders: the individual has physical symptoms usually associated with some sort of disease or physical disorder but the symptoms can't be explained in terms of medical conditions
    - Conversion disorder: involves impaired motor functioning (paralysis) or impaired sensory functioning (blindness) that cannot be attributed to any neurological problems but could be attributed to psychological factors like stress
    - Hypochondriasis: does not have physical symptoms but is preoccupied with bodily symptoms and is afraid they have a serious medical problem and cant be reassured by medical doctors
- Personality Disorders: characterized by patterns of behavior or thinking that are clearly and substantially inconsistent with the expectations of one's culture
    - Paranoid personality: extremely suspicious and distrustful
    - Antisocial personality: tramples on the rights of others, impulsive, and lacks a conscience
    - Borderline Personality: trouble maintaining relationships, and has a wide fluctuation in both self-image and emotional behaviors
    - Narcissistic Personality: needs undue admiration and praise, preoccupied with fantasies of success,accomplishments, and recognitions, feels entitled to special treatment, and lacks empathy for others
- The medical approach: offers explanations that focuses on physical or biological reason
- The psychoanalytic approach: focuses on the possibility that unconscious conflicts, rooted in early childhood, cause anxiety that is then dealt in a maladaptive way
- The cognitive approach: explains abnormal psychology in terms of abnormal patterns of thinking
- The learning or behavioral approach: the problem itself is the problem, disorders are learned behaviors

People

- William Wundt:

    - first psychologist,
    - set up the first psychology laboratory in Leipzig, Germany
    - Structuralist
- Edward Titchner
    - Set up the first psychology lab in the US
- William James
    - Functionalist
- Sigmund Freud
    - Pschodynamicist
- B.F. Skinner
    - Explains language development in terms of operant conditioning principles
- Noam Chomsky
    - Claimed children have a language acquisition device
- Alfred Binet
    - First to develop an intelligence test
- Charles Spearman
    - Label general intelligence “g”
- Lev Vygotsky
    - developed a theory that children’s interaction with knowledgeable adults or older children helped them develop skills.
        - For example, an older sibling can help a young child learn how to do long division by guiding him or her step-by-step.
    - The goal of this guidance is to impart both knowledge and skill to the child.
    - Guided participation is also used in the instruction of adults and is an important teaching tool.
- Gordon Allport
    - was one of the earliest psychologists in America who undertook a rigorous and structured approach to studying personality.
    - He identified the idiographic and nomothetic views to personality study in 1937 with a goal of differentiating between common traits and those that are unique to individuals.
- Meyer Friedman
    - was a researcher who pioneered the development of two personality types, A and B, according to how well (or poorly) they respond to the multiple demands of everyday life.
        - Dr. Friedman described Type A personalities as high achieving, multitaskers who are always very stressed and in a hurry.
        - Type B personalities, on the other hand, are described as easy going, relaxed, and not always in a hurry.

Online Text

Chapter 8: Memory

- Encoding - the input of memory into the brain
- Automatic processing, or the encoding of details like time, space, frequency, and the meaning of words
    - Usually done without conscious awareness
- Effortful Processing - putting work and attention to learning information

Chapter 3: Biopsychology

- **Theory of evolution by natural selection** - Charles Darwin; the theory states that organisms that are better suited for their environment will survive and reproduce, while those that are poorly suited for their environment will die off
- **Genotype** - genetic make-up of an individual
- **Phenotype** - the individuals inherited physical characteristics
- **Dominant allele** - one of these genes inherited from the parent means the trait will show up (Bb)
- **Reccessive Allele** - both alleles need to be the same in order for this trait to show up (bb)
- **Homozygous** - both alleles for a trait are the same
- **Heterozygous** - a combination of alleles
    - A punnet square is a tool used to determine the probability of a child having a trait from their parents/to map out the possibility of inherited traits
- **Polygenic -** controlled by more then one gene
- **Mutation -** a sudden, permanent change in a gene
- **Range of reaction -** our genes set the boundaries within which we can operate, and our environment interacts with the genes to determine where in that range we will fall
    - Ex: being predisposed to high levels of intellect + a stimulating environment leads to you achieving your full potential
- **Genetic environmental correlation** - our genes influence our environment, and our environment influences the expression of our genes
    - Our genes and environment both interact and influence each other

Transcript

1. History, Approaches, and Methods
    - 1.1 History of psychology
2. Biological Bases of Behaviour
    - 2.1 Endocrine System
        - Made-up of glands located throughout the body which secrete hormones into the bloodstream
            - **Hormones -** chemical messengers which regulate bodily functions
        - The endocrine system controls metabolism, our growth rate, how well we digest our food, blood pressure, sexual development, reproduction, etc.
        - There are multiple glands located throughout the body; the master gland is known as the **pituitary gland**
            - It is located between the eyes, in the middle of the brain
            - It controls multiple other systems and glands
            - And when activated by the hypothalamus, activates the remaining glands throughout the body
    - 2.2 Etiology
        - The biological explanation for mental disorders within psychology; **the roots or origins of mental problems**
            - Genetic predispositions
            - Hereditary links to psychological disorders
            - Malfunctioning that can occur withing brain chemistry
    - 2.3 Functional Organization of the Nervous System
        - Nervous System
            - Communication occurs within the nervous system via neurons
            - **Neurons** - cells that have highly specialized tasks and methods for both recieving and transmitting information all across the body
        - Neuron Structure:
            - Cell Body
                - Contains the central operating system; this contains the nucleus where the energy is produced
            - Dendrites
                - Takes the information in from outside the cell
                - Feelers that lookout information
            - Axons
                - Pass the information along to other nerve cells
                - Is typically a single strand, with axon terminals at the end
            - Myelin sheath

- Covers the axon on some of the neurons, not necessarily on all neurons
- It's meant to insulate the communication and the transmission of electrical impulses along the axon, so that it travels in a rapid and efficient manner
    - Nodes of Ranvier - gaps between the myelin sheath

- Types of Neurons:
    - Sensory/afferent neurons
        - These neurons take information from the body tissues and from all areas of the body such as sight, touch, sound, smell, taste, etc. and send them along neural pathways along the spinal cord and into the brain
    - Motor/Efferent Neurons
        - Information is sent from the spinal cord and the brain to the body tissues, muscles, and sensory organs in order to respond to the environment
    - Interneurons/Association Neurons
        - communicate information between the motor and sensory neurons
        - the most abundant within the body
- Neurons work through the use of electrical impulses and **Neurotransmitters,** chemical molecules that are contained within the **vesicle**, almost like a sac at the end of the axon terminal
- Either it is broken up and taken back into the neuron or it is destroyed and no longer used
- Each neurotransmitter has its own function
    - Serotonin - has an impact on our mood and emotional states; plays a role in sleep and attention
    - Dopamine - plays a role in attention, momevent, and pleasure sensations
- These neurotransmitters can be tricked by the presence of drugs or medicine, which mimic the neurotransmitters
    - **Agonistic process** - an increase in neural activity and flow of information would occur
    - **Antagonists** - decrease neural activity and decrease the flow of information
- Nervous System
    - **Central Nervous System (CNS)**
        - includes the brain and the spinal cord
        - Suspended in cerebral spinal fluid, which acts like a cushion
        - Controls reflexive behaviour

        - Ex: when you go to the doctors and they hit your knee and it jerks out
        - They involve the sensory, motor, and interneurons
    - **Peripheral Nervous System**
        - Connects the brain and the spinal cord to the rest of the body
            - **Somatic nervous system** - carries information from the muscles and the organs and the skin over to the central nervous; soma means body
            - **Autonomic nervous system -** controls the involuntary movements in the body; controls certain muscles and glands
                - **Sympathetic nervous system** - prepares us for action; when facing danger helps the body prepares to either fight or run (fight or flight response)
                - **Parasympathetic nervous system -** calms the body down in order to bring the body back into it's calm state

- 2.4 Genetics
    - Human behaviour is the product of genetics and our environment, and the interactions of the two
    - Nature vs. nurture
- 2.5 Neuroanatomy
    - **Brain Stem** - the oldest region of the brain
        - First develops during conception, and the oldest in terms of evolution
        - Controls our basic functions, such as swallowing, breathing, and involuntary muscle movements
        - The pons and the medulla help within the functioning in these areas
        - Where the spinal cord enters the skull connects up into the **midbrain region**
    - **Midbrain Region**
        - **Thalamus** - receives information about the senses; taste, touch, sight, and hearing are all processed and relayed from the brain stem into the middle region where the thalamus is located and sends the information up to the higher regions of the brain
        - **Cerebellum** - helps us control our balance, as well as other voluntary motions, and the limbic system
        - **Limbic system -** sits between the brainstem and cerebral cortex
            - Sits between the older parts of the brain and the more recently evolved cerebral cortex on top of the brain

- **Amygdala -** controls anger and fear
- **Hippocampus -** controls/helps coordinate the memory systems
- **Hypothalamus -** helps control feeding, the fight or flight response, and sexual activity

- **Reticular Formation -** runs through the thalamus and the brain stem
  - Helps control sleep and arousal; our ability to be alert and awake
  - helps us filter stimulus that comes into the body from the various senses, and to move that to other parts of the brain
- **Cerebral Cortex** - The outer covering of the brain
  - It is divided into two hemispheres, which together helps control higher-order functioning, motor functioning, higher-order cognitive functions, aspects like time management, task management - all of our higher-order aspects of cognitive functioning
  - The two hemispheres are connected by a line of fibers that help communicate from the left to right
  - The hemispheres are divided into four regions
    - **Frontal lobes -**
      - coordinate movement and higher-level functioning
      - where we find the Broca's area and the Wernicke's area, which control our speech and language and comprehension and speech production
      - Damage to these areas can lead to severe difficulties in speech production and speech production comprehension
    - **Parietal Lobes -**
      - Located on the top of the brain
      - Helps control the sense and touch
      - We have neural pathways all the way down to the feet and the palms of the hand which send information to the parietal lobe for sensory information
    - **Temporal Lobe -**
      - Located near our temples
      - Helps control our hearing, among other functions
    - **Occipital Lobes -**
      - Located in the back of the head
      - Helps us control vision

- 2.6 Psychological Techniques
  - Over the past 50 years, science has led to advances in techniques to look inwards into the brian
    - **EEG (electroencephalograph)**

            - Little kind of electrodes that we put into various parts of the brain and head, and other parts of the body, which yield the lines we see in hospital scans
        - **MRI (Magnetic resonance imaging techniques), FMRI (functional magnetic resonance imaging),** a more advanced method of looking into the brain
        - Cat and Pet scans
- Chapter 3
    - Section 3.1 Attention
        - **Sensation** - transforming energy from outside stimuli into neural energy ; energy within the neural energy
        - **Perception** - the process of taking that neural energy and creating an image of the outside world
        - **Psychophysics** - the area of of psychology that address the topic of sensation; talks about the level of intensity that we can detect various stimuli
        - Each person has a different level of sensitivity when it comes to detecting stimuli
        - Past experiences and expectations play a role in your ability to notice stimuli
        - **Signal Detection Theory** - talks about different degrees of stimulation that come into your environment, and it depends on how sensitive you are to a particular stimuli
    - Section 3.2: Other Senses: somesthesis, olfaction, gustation, vestibular system
        - **Somesthesis** - the body's sensitivity to touch
            - **Skin -** the largest organ in the body
                - Keeps bodily fluids in, and germs out
                - Being able to sense various temperatures, pain, being able to tell where the sensation is
            - **Kinesthetic Sense -** knowing how your body moves, without physically watching it
                - Internal sense of awareness of the movement of your body
            - **Vestibular Sense -** keeps the body's balance system in order; gives you your sense of balance; also spatial awareness
                - Based on information that is processed in the ear; in the semicircular canal there is a liquid, which moves around the ear. Through the movement of the liquid and gravity, and movement in the linear and horizontal sense, that the brain is able to process where your body is at relative to

gravity and relative to other objects within your sensory environment

- **Olfactory Sense -** provided by the nose
    - The olfactory system goes through its own system of travel, called the olfactory bulb, which has a direct connection to the amygdala
        - The amygdala is one of the emotional seats in the brain
        - The reason that there is a direct link between the smell sense and memory
- **Gustation / the gustatory sense -** sense of taste
    - Interplay between the tongue and the nerves
        - Relates to the nostrils and nose
    - Helps process smells
    - Contributes to our nutritional processes
        - Understanding what to take in, when we are satiated, what we are eating; potentially whether something is noxious/poisonous
    - Five types of taste buds: bitter, sweet, salty, sour, and savory (unami)
        - Helps to understand how to react to the environment

- Section 3.3: Perceptual Development
    - **Ecological Viewpoint -** from the nature perspective; states that some of our abilities are present at birth
        - The ability to see between dark and light shadows
        - A certain amount of auditory senses
    - **Constructivist/Constructivism Approach -** perception is constructed through learning experiences and through your reliance on various experiences within life
        - Your vestibular sense is going to be refined through engaging with the outside world
- Section 3.4: Perceptual Processes
    - Stems from, or relates to, the Gestalt psychologists; among the first to formulate rules by which the bain pieces together meaningful experiences out of fragments of sensations
    - The mind fills the gaps in our sensations
    - We are able to perceive objects in 3-dimensions, despite the fact that our retina are only coming in a two-dimensional way as a sensation

- **Depth Perception -** allows us to estimate distances between ourselves and the objects we see; there are two types of cues that help:
    - **Binocular cue -** we are using both eyes and, because of the spacing between our eyes, each retina receives a slightly different picture of the world
        - One of the cues of distance
    - **Convergence -** the extent to which the eyes must turn inwards, meaning converge towards the nose to view an object
        - The greater the convergence, indicates that an object is closer
    - **Monocular Cue -** require only one eye; linear perspective, refers to the fact that parallel lines appear to converge as they are further away
- **Motion Parallax -** refers to the apparent motion of stable objects as we ourselves are moving
- **Interposition -** where positioning, based on the positioning of the object, affects your depth perception
- Our perceptual set is affected by what our expectation is form the stimuli itself
- Processing information from the environment happens in both a **bottom-up fashion**, from simple sensory receptors to more complex neural networks, and a **top-down**, from which expectations, motives, and maybe even contextual cues are on the top level all the way down to our raw sensory data

- Section 3.5: Receptor Processes: vision, audition
    - **Visual Processes -** allows for the processing of visual details through the use of eyes
    - We detect and interpret information from visual light that comes in from our external environment; this light hits the retina and then travels down the optic nerve and into the visual cortex, which allows us to build a representation of the world around us
    - **Audition -** the process of taking in sound through the ear and how it travels to the brain
        - Within the ear are a myriad of microsystems involved in creating sound themselves
        - Auditory energy enters into the ear and goes into the various canals

        - It is almost like a drum; it resonates and creates energetic movement against a membrane in the ear, which sends information further along into the auditory nerve system
        - It eventually hits the auditory information in the brain and that's where we process all of the auditory information in the brain and this is how we interpret information as meaningful or less meaningful

- Chapter 4
    - Section 4.1: Sleeping and Dreaming
        - **Consciousness** is a way of defining our state of awareness: self-awareness, awareness of our environment,
        - **Circadian Rhythm -** we have a built in clock, a set of rhythms and pace
            - This natural rhythm controls our wakefulness, our ebbs and flows in alertness , and our bodies hormone levels and temperature
            - If left to run freely, the clock will operate on its own 25 hour schedule
        - **Stages of Sleep:**
            - **Stage One -** we experience the advent of **alpha waves**; during this stage alpha waves are moving fairly quickly, and we begin to experience this **hypnagogic sensation,** a sudden moment of wakefulness
            - **Stage Two -** brain waves switch over to **beta waves,** which are moving a bit slower; what is identified in this area of sleep spindles which look like slower, jerky types of electric waves called K-complexes; they are spikes of neural activity
            - **Stage three and four** - our deep sleep stages where we have the advent of **delta waves**, as well as what we refer to as **slow wave sleep**
            - **Fifth stage -** REM (rapid eye movement) sleep; it is during this phase that we have our dreams
                - In this stage, our minds are the most active, but our bodies are shut down
        - **Sleep Disorders:**
            - **Insomnia -** the most common; when there is difficulty falling asleep, cannot get your mind to enter into deeper states of sleep
            - **Hypersomnia -** falling asleep too much; you can't break out of your sleep easily
            - **Narcolepsy -** sudden sleep onset

        - **Sleep Apnea** - a condition where people lose oxygen to the brain because they are having a variation of snoring where the airways of the nostrils shut down or are closed and a person isn't able to breathe freely
- Dreams are important to both you and the body; when the body loses sleep, your body gives you what is called rem rebound, an excessive amount of REM sleep
- **Theories of Dreaming:**
    - Sigmund Freud - manifest content in dreams;
    - **Activation Synthesis -** our brains is firing with billions of neural activity and because of this various images pop up into the mind's eye and we synthesize these images when we wake up an concoct a story from them
    - **Information Processing -** our dreams are meant to help us digest and make sense of the activities of our day