Final Study Guide

Unit 1 Review

- Rationalist: we are born w/ preconceived ideas
- Empiricist: we learn from factual experience
- Dualist: mind/body separated
- Monist: mind/body one
- John Locke: tabula rasa, empiricist
- Descartes: i think therefore i am, dualist
- Aristotle: monist
- Plato: Dualist
- Immanuel Kant: rationalist/empiricist
- Behaviorism: focuses on behavior
- Psychoanalytical: unconscious expiriences
- Humanistic: free will, self-esteem, human potential
- cognitivism: thoughts, mental processes
- biological: brain chemistry, structure, function
- sociobiological/evolutionary: culture's effects
- Ivan Pavlov: behaviorist
- Sigmund Freud: psychoanalytical
- Carl Rogers: humanistic
- Herbert Simon: cognitivist
- Roger Sperry: biological
- Charles Darwin: evolutionary
- *eclectic: studying more than one
- dialectic: synthes, antithesis, thesis
- structuralism: introspection to figure out brain structure
- functionalism: humans actively engaged in thought
- association ism: linkage of ideas to learn

Unit 2 Review

- *scientific method involves creating a theory, hypothesis, and conducting research
- descriptive research describes
- case study: in depth look at one subject
- observer effect: subject knows observer is there during naturalistic observation
- sampling bias: sample doesn't rep population
- correlation coefficient shows relationship btwn two variables
  - positive: both variables go ↑
  - negative: go ↓
  - zero: no relationship
- independent variable: altered by experimenter
- dependent variable: measured by experimenter
- confounding variables: outside of research, alters experiment
- *central tendency: mean/median/mode

Unit 3 Review

- Franz Gall: brain exams
- neurons: transmit info in nervous system
  - dendrites: branches that RECEIVE messages
  - axon: SENDS message (axon hillock attaches to stroma
  - synapse is where communication happens
- interneuron communication: neurons connected to others sending message
- intraneuron communication:
- neurotransmitters: chemical messengers (excitatory cause activity, inhibitory decreases activity)
- reuptake: neurotransmitters saved for later
- acetylcholine: muscle action, learning, memory
- dopamine: movement, learning, attention, emotion
- serotonin: mood, sleep, arousal, focus, hunger

- norepinephrine: fight/flight
- GABA: inhibitory, slows brain activity
- glutamate: memory/thinking
- 2 parts of nervous system: central, peripheral
- sensory neurons: receptors → brain
- motor: brain → muscles
- afferent pathways: body → brain
- efferent pathways: brain → body
- somatic: muscles
- autonomic: controls internal muscles
- sympathetic: expends energy
- parasympathetic: calming

nervous system

- endocrine system controls hormones
* pituary gland releases growth hormone
- thyroid gland: metabolism
- pancreas: insulin
- adrenal gland: adrenaline
- ovaries/testes: sex hormones
- brainstem: automatic

endocrine system

- medulla: automatic (breathing, etc.)
- pons: mess. btwn spine/brain
- midbrain: mental arousal, alertness, sleep
- thalamus: SENSES (except smell)
- cerebellum: move, balance, learning, memory
- limbic: memory, emotions
  - hippocampus: memory
  - amygdala: fear, aggression
  - hypothalamus: eat, drink, temp, endocrine, emotion, reward

parts of the brain

- frontal: planning, thinking, decision-making
- parietal: attention
- occipital: vision
- temporal: hearing
- primary motor complex: voluntary move
- somatosensory: senses from skin/muscles
- auditory: sound
- visual: visuals
- broca's area: speech
- wernicke's area: understanding speech

cerebral cortex

- left hemisphere: language
- corpus callosum: connects hemisphere
- neurogenesis: brain can grow new neurons
- ablation: removal of brain part
- deep lesioning: removal of brain tissue
- ESB: electrodes attached for stimulation
- EEG: electrodes attached to watch activity
- angiogram: checks vascular health
- CAT scan: pics of brain
- MRI: magnets used to take pics
- PET: colorful pics to measure activity

Unit 4 Review

- sensation: physical receptors
- perception: how brain interprets the sensation
- top-down processing: brain taking in what we perceive (partially covered stop sign)
  - selective attention: track one message, ignore stimuli
  - inattentional blindness: only tracking one thing

- sensory adaption: becoming accostumed to a stimuli
- absolute detection theory: min. amount of physical energy noticeable
- signal dection theory: hit miss, false alarms
- just noticeable: min amt of change noticeable
  - *Weber's Law
- transduction: physical → chemical
- cornea: where light waves reflect (transparent dome)
- aqueous: fluid
- pupil: expands/retracts
- iris: colored part
- sclera: white, focuses light
  - *accomodation: change of focusing distance
- retina: sensory tissue
  - ganglion cells
  - interneuron layer (bipolar, horizontal, photoreceptors
  - cones: bright light/color vision

anatomy of eye

- fovea: center of retina
- recieve light waves is step one
- wavelength: dist. from one peak to next
- feature detectors: cells that detect features
- young-Helmholtz Th.: three type of cones for three colors
- opponent-process th.: opposing colors provide all colors
- Gestalt
  - figure ground: standing out against background
  - proximity: grouping close objects as one
  - similarity: grouping similar objects as one
  - closure: finishing incomplete objects
- perceptual constancy: object unchanging even tho its changing
- proximal: object in retina
- distal: object in world
- convergent: object staying in middle of retina
- judging perception:
  - linear: converging road lines (dist.)
  - rel. size: smaller = further
  - rel. pic. plane: near horizon = further
  - light/shadow: 2D → 3D
  - interposition: in front = closer
  - texture: denser pattern = further
  - aerial pers.: fog = further
  - rel. motion: closer = faster
- pinna: outer ear, amps sound
- aud. canal: carries sound to middle ear
- ear drum: moves bc of sound waves (sound wave → mechanical)
- ossicles: small bones → transmit vibes
  - hammer
  - anvil
  - stirrup
- oval window: connects stapes to cochlea, transmits vibes
- cochlea: coiled, fluid-filled
  - basilar mem: converts mechanical → neural

*electrochemical impulse: aud. receptors on bas. membrane make up nerve that goes 2 brain

- hearing related to physical energy
- pitch: wave frequency
- volume: amplitude
- conduction hearing loss: sound → cochlea damage

- sensorineural loss: damage 2 receptor cells
- Place Theory: specific pitches bc of place on cochlea
- Frequency Theory: specific pitches bc of nerve impulses matching frequency
- Duplicity Theory: both of above ↗
- stereophonic: hearing w/ 2 ears
- receptor cells of taste buds transmit chem. energy to electrochem. impulse
- receptor cells make up olfactory bulb (olfactory cortex in temp. lobe)
- somesthetic senses: skin, muscles, joints, organs (& balance)
*kinesthetic sense: awareness of pos.
*vestibular sense: balance (SACS in ear)
- gate control th: spinal chord allows/blocks pain messages

Unit 5 Review

- consciousness: the emotions, memories, & sensations, perceptions we experience
  - conscious:
  - preconscious: automatic
  - subconscious:
- altered states: shallow cognition, altered perception, lowered inhibitions
- hypnosis relaxes u, reduces pain, make progress in therapy
- meditation: used to alter consciousness thru deep thought
- sensory deprivation: major reduction of sensory stimulation
- sleep = activity of suprachiasmatic nucleus in hypothalamus
- Preservation Theory: sleep protects us from predators
- Restorative Theory: sleep restores natural resources
- Stage 1: light sleep
- Stage 2: more relaxation, low body temp. sleep spindles
- Stage 3: deepest, big/slow delta waves
- stage 4: same as stage 3
- REM: most active, muscles paralyzed, dreams
- *awake brain = beta waves
*manifest content: storyline
*latent content: symbolic
- activation synthesis: REM triggers neural activity that triggers dreams
- insomnia: inability to sleep
- narcolepsy: uncontrollable sleep
- sleep apnea: temp interruptions of breathing
- night terrors: periods of high physical/emotional fear
- somnambulism: sleep-ing
- substance abuse: impaired control, social impairment, riskier use, withdrawal symptoms
- tolerance: users don't feel same after dosage

DEPRESSANTS

Alcohol:
- altered GABA/dopamine
- effects cerebral cortex, limbic system, cerebellum, hypothalamus, medulla
- slowed neural processing, memory disruption, reduced self control

Barbs:
- addictive, high risk of OD
- slowed brain activity, hr, respiration
- enhances GABA

STIMULANTS

Narcotics:
- mimics endorphins to ease pain
- high risk of OD, high tolerance, withdrawal

Nicotene
- activates/increases acetylcholine

Cocaine
- increase transmission of norepinephrine (euphoria, alertness)

meth
-increases norepinefrine/dopamine
MDMA
-increases serotonin, norepinephrine
HALLUCINOGENS: distorts perception, sensory expectations
LSD
-blocks serotonin
-THC: in marijuana, effects long-term memory, coordination, learning, sensory/time perception, problem-solving

Unit 6 Review

*classical conditioning, operant conditioning, cognitive/social learning
-neutral stimulus becomes conditioned stimulus
-temporal conditioning requires time frame
-simultaneous: neutral/unconditioned presented at same time
-backwards: unconditioned before neutral
-acquisition: processes of classical conditioning w/ learning
-extinction: when subject forgets relationship btwn stimuli
-savings: reconditioning in less time
-spontaneous: conditioned response suddenly reappears
*generalization vs discrimination
-Thorndike's law of Effect: behaviors increase if rewarded, vise versa
-shaping: rewarding small behaviors that lead to bigger ones
-Premack Principle: using high probability behaviors to reinforce low ones
-fixed-ratio: set #
-variable-ratio: changing #
-interval: amount of time
-latent learning: learning isn't visible till reward
-discovery learning: based on sudden insight

Unit 7 Review

-memory: continuance of learning - encoding, storage, retrieval
-encoding: taking in thoughts/memories
-storage: holding info over time
-retrieval: bringing back stored memories