STUDY SHEET FOR EXAM 2: PSYCH 2210

FORMAT: - 45 Multiple Choice and True/False Questions (3 pts each)
- Exam is during class time
- Best way to study: try to define/identify terms below without looking at notes or text. Then go back and check.

TEXT MATERIAL:
Addiction/MDMA: Chap 5: p 117-132

Methods: You are responsible for material in Chap 4: p 91-101. Focus on techniques we covered in class.

Sexual Orientation: Chap 7: 188-204

LECTURE MATERIAL:

Mechanisms of Action of Drugs
Agonist vs. antagonist effects
Know drug examples given in class; which neurotransmitters they affect and how-
-novocaine; TTX
-botox
-cocaine vs. methamphetamine
-aricept
-heroin (opiates)
-narcan
-LSD & Hallucinogens

Addiction
Definition
Interaction of biology & environment
Brain Reward Circuit
Know anatomy of the circuit: Ventral Tegmental Area; Nucleus Accumbens
Role of Dopamine
Evidence
Receptor Binding Studies: which structures are labeled
Microdialysis studies measuring neurotransmitter release
Natural Rewards: food; sex
Intracranial Self-Stimulation studies
Drug Self-administration studies
Effects of requip (e.g., used in treatment for Parkinson’s)
Risk factors
Age at first use
Genetics
Relationship to mental illness
Impoverished environment

**Drug, Brain & Behavior**

*MDMA*
- Pure MDMA vs."Molly"
- Psychological & Physical effects of MDMA
- Role of serotonin, norepinephrine, dopamine on specific MDMA effects
- MDMA effects on brain activity & connectivity
- MDMA effects on negative vs. positive memories

*Use of Psychedelics in Therapy*
- MDMA and treatment for PTSD
- Psilocybin and treatment for anxiety/depression
- Potential issues

**Methods**

*Measuring Electrical Activity*
- Single cell recordings: definition, what is recorded
- Stereotaxic Surgery
- EEG: definition, what is recorded
- ERP: definition, what is recorded
- Advantages and disadvantages of ERP/EEG vs. single cell recording

*Imaging Techniques*

*Structural Imaging*
- CT scans: definition, what they measure
- MRI Scans: definition, what they measure
- Comparisons of CT to MRI: pros & cons of each

*Functional Imaging*
- PET: definition, what it measures
- fMRI: definition, what it measures; BOLD response
- Problems with imaging designs

**The Sexual Brain**

Prevalence rates; gender differences; methods to estimate rates

*Sexual Differentiation*
*Biological Sex*
*Gender Identity*
*Sexual Orientation*
- Hormones: organizational vs activational effects

*Sex determination*
- Genotype vs. phenotype
Sry gene
Indifferent gonads
Genital Tuberde
Wolffian Ducts
Mullerian Ducts
Steps in male phenotype
Steps in female phenotype

Clinical Cases: phenotype vs. genotype
Congenital Adrenal Hyperplasia (CAH)
Androgen Insensitivity Syndrome (AIS)
Turner's Syndrome
5-Alpha-reductase deficiency

Organizational Effects of Hormones
Sensitive period
Sexual Dimorphism
Sexually Dimorphic Nucleus (SDN)-POA
Role of Testosterone
Organizational Effects and Sexual differentiation

Fetal Hormones and Sexual Orientation
Theories about sexual orientation: Nature vs. Nurture
Freud
Social Constructivism
Prenatal Hormones: Ellis & Ames Hypothesis

Evidence for Prenatal Hormone Hypothesis
Prenatal hormones produce sexually differentiated effects on body, brain, behavior
Prenatal hormones & partner preference in animals
Sexual Dimorphism in humans: markers of prenatal testosterone; pattern in gay and lesbian individuals
  2D-4D ratio
  otoacoustic emissions
  INAH-3 (LeVay Study)

Clinical Studies: what is the prenatal hormonal level; what is adult sexual orientation?
CAH females
AIS individuals
5-alpha reductase individuals
John/Joan case study

Genetic & Immunological Factors
Twin studies: rates in identical vs. fraternal twins
Hamer Studies: genetic markers & sexual orientation
Fraternal Birth order effects

Gender Identity
Size of Bed Nucleus of the Stria Terminalis in M, W, Transgender individuals