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:

**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  

Experimental Techniques  
Transcranial Magnetic Stimulation  
Optogenetics  

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