

Unit 3 Exam Study Guide

Number of Questions: Neurons & Neurotransmitters 14 / Neuromodulators 2
Peripheral Nervous System 1 / Central Nervous System 13
Sensation & Perception 15 / Sleep, Meditation & Hypnosis 11
Psychoactive Drugs 9 / Fun 2 / Total of 67

Key Concepts: Neurons / Glial Cells & Schwann Cells / Dendrites / Axon / Myelin
Resting Potential (-70 mV) / Role of Sodium & Potassium Ions
Ion Channels / Excitatory & Inhibitory Impulses / Threshold
Action Potential (+30 mV) / Propagation of Neural Impulse
Refractory Period / Benefits of Myelin / Axon Terminal Buttons
Synapse / Pre-Synaptic / Post-Synaptic / Synaptic Vesicles
Neurotransmitters / Post-Synaptic Receptors / Lock & Key Design
Reuptake / Acetylcholine / Endorphin / GABA / Epinephrine
Norepinephrine / Dopamine / Serotonin / Bi-Polar Disorder
Parkinson's Disease / Schizophrenia / Depression / Neuromodulators
Endocrine System / Drug Action & Neurotransmitters

Nervous System Organization - Key Terms

Peripheral Nervous System

- Somatic

- Autonomic (Parasympathetic and Sympathetic)

Central Nervous System

- Brain and Spinal Cord

Hindbrain

- Brainstem (Medulla, Pons, Reticular Formation)

- Cerebellum

Midbrain

- Thalamus, Hypothalamus, Substantia Nigra

Limbic System

- Amygdala, Hippocampus, Hypothalamus, Pituitary,

- Thalamus, Olfactory Bulbs, Cingulate Gyrus

Forebrain

- Corpus Callosum

- Cingulate Gyrus

- Cerebral Cortex (Frontal, Temporal, Parietal, and Occipital Lobes)

Key Concepts: Left & Right Brain Hemispheres / Lateralization / Somatosensory Cortex / Motor Cortex / Sensation / Transduction / Tactile Sensations Taste (Sweet, Sour, Salty, Bitter & Umami) / Chemical Sensations of Hot & Cool / Smell (Olfactory Bulbs) / Flavor / Audition (Hearing) Cycles per Second (Hz) / Frequency & Pitch / Tympanic Membrane Ossicles (Hammer, Anvil & Stirrup) / Oval Window / Cochlea Vestibular Sense (Semicircular Canals) / Vision / Wavelength & Color Pupil / Iris / Cornea / Lens / Retina / Fovea / Ciliary Muscles / Rods Cones / Optic Nerve / Retinal Receptor Sensitivities (Overlap) Dark Adaptation / Optic Chiasm / Perception of Three Dimensions Monocular Cues (Size Constancy, Shape Constancy, Interposition & Aerial Perspective) / Binocular Disparity / Visual Illusions (Relative Size Illusions, Impossible Figures & Ambiguous Figures) / Amount of Sleep Required (7½ or 9 Hours) / Stages of Sleep (Brain Waves) Beta Waves / Alpha Waves / Meditation / Hypnosis / Delta Waves (Restorative Sleep) / REM (Dreaming) / Sleep Cycles (90 Minutes) Circadian Rhythm / Sleep Deprivation / Insomnia / Sleepwalking Psychoactive Drugs / Method of Action (Effects at Synapse) Oral Administration (Ingestion) / Inhalation (Smoking) / Intravenous Injection / Intramuscular Injection / Absorption via Mucous Membranes Absorption Through Skin / Stimulants / Caffeine / Nicotine / Cocaine, Amphetamine & Methamphetamine / Sedatives (Depressants) Alcohol / Blood Alcohol Concentration / Minor Tranquilizers (Benzodiazepines) / Synergism / Opiates / Marijuana (THC) Hallucinogens / Psilocybin (Mushrooms) / LSD / Ecstasy (MDMA) Untoward (Side) Effects / Impurities in Street Drugs (Cutting Drugs) Tolerance / Addiction and Loss of Control

Because of the emphasis on physiology in this unit there is a great deal of terminology to remember. It is important that you know not only the names of the various structures and chemical agents, but their functions as well. Focus on those that were repeated extensively throughout the lectures and text, especially those involved in a number of different functions.

The questions on the exam are in the order I presented the material in class. With all the questions related to a particular topic grouped together it's easier for you to focus on that topic, its perspective and its terminology. And you can address the areas you're sure of first, then spend more time on those you're not so sure of. You'll have nearly two hours to take the exam, almost two minutes per question. So relax!

A Few Exam Taking Tips From Our Friends At DSPS

- ☺ **Be prepared.** Organize yourself and learn the material; take a step by step approach to avoid feeling overwhelmed. Make notecards to help remember terms, dates, and key points.
- ☺ **Approach the exam with confidence.** Use strategies to succeed, such as visualization — before you go to bed at night, see yourself calmly taking the test and getting a “B” or whatever grade is good for you.
- ☺ **Get a good night’s sleep.** This might seem hard to do, but don’t stay up cramming all night. You will just be too tired to remember.
- ☺ **Don’t go to the exam with an empty stomach.** Fresh fruits and vegetables are often recommended to reduce stress. Eat an apple or an orange. Stay away from processed foods, sodas, junk food, sugar, chips, and white flour products.
- ☺ **Give yourself plenty of time.** Arrive early, don’t rush, and keep your thoughts positive.
- ☺ **Remember to BREATHE.** When we get anxious, we “forget” to inhale properly, our breathing becomes shallow, and our body doesn’t get enough oxygen. Taking four or five slow deep breaths can get us back in control of our body and mind and get the much-needed oxygen flowing again.

