



**United Council for Neurologic Subspecialties
Behavioral Neurology & Neuropsychiatry
Written Examination
Content Outline**

REV 12/06/13

The UCNS Behavioral Neurology & Neuropsychiatry (BNNP) examination was established to determine the level of competence for Behavioral Neurologists and Neuropsychiatrists. The examination will assess current clinical practice.

The following content outline is provided to examination candidates interested in the certification examination. The content outline consists of four primary categories followed by subcategories. A complete description of the core content required of Behavioral Neurologists and Neuropsychiatrists can be found in the BNNP Core Curriculum at <http://www.ucns.org/globals/axon/assets/3636.pdf>.

The written examination consists of 200 multiple choice questions.

<u>Content Area</u>	<u>Percentage of Questions</u>
I. Structural and Functional Neuroanatomy	25%
II. Neuropsychiatric Assessment	25%
III. Treatments	25%
IV. Neurobehavioral and Neuropsychiatric Syndromes	25%

I. Structural and Functional Neuroanatomy

A. Brain Organization

1. Cerebral cortex and its parts
2. Limbic and paralimbic structures
3. Basal ganglia
4. Diencephalon
5. Brainstem
6. Cerebellum
7. White matter
8. Cortico-cortical and cortical-subcortical circuits
9. Regional cerebral specialization
10. Neurochemistry – neurotransmitters, neuropeptides, neurohormones
11. Cerebrovascular and ventricular systems

- B. Cognition, Emotion, and Behavior
 - 1. Cognition (e.g., arousal, perception, attention, recognition, memory, language, praxis, visuospatial function, executive function)
 - 2. Emotion (e.g., mood, affect, affective prosody)
 - 3. Behavior (e.g., sleep, motivation, comportsment, personality)

II. Neuropsychiatric Assessment

- A. Neurological Examination
 - 1. Elemental neurological function
 - 2. Neurological “soft-signs”
 - 3. Standardized rating scales
- B. Mental Status Examination
 - 1. General assessment of cognition, emotion, and behavior
 - 2. Cognitive examination, including quantified clinical assessments
 - 3. Standardized assessments of neuropsychiatric symptoms and syndromes
 - 4. Clinical interpretation of mental status examination findings
- C. Neuropsychological Assessment
 - 1. Indications for neuropsychological testing in evaluation and treatment planning
 - 2. Content, sensitivity, and specificity of neuropsychological testing
 - 3. Factors that influence test performance
 - 4. Relationship between neuropsychological tests and bedside or office-based quantified clinical assessments
 - 5. Clinical interpretation of neuropsychological test results
- D. Neuroimaging
 - 1. Principles and applications of structural and functional imaging
 - 2. Correlation between neuroimaging and clinical examination
 - 3. Neuroimaging biomarkers of neurobehavioral and neuropsychiatric conditions, including neurodegeneration and neurotrauma
- E. Electrophysiologic Testing
 - 1. Principles and applications of electrophysiologic recordings
 - 2. Correlation between electrophysiologic findings and clinical examination
 - 3. Electrophysiologic biomarkers of neurobehavioral and neuropsychiatric conditions, including neurodegeneration and neurotrauma
- F. Laboratory Studies
 - 1. Indications for serum and urine studies
 - 2. Indications for and interpretation of results from CSF examinations
 - 3. Neurogenetics of neurobehavioral and neuropsychiatric conditions
 - 4. Neuropathology of neurobehavioral and neuropsychiatric conditions, including neurodegenerative diseases, cerebrovascular disorders, and neurotrauma

III. Treatments

- A. Somatic Therapies
 - 1. Neuropharmacologic agents
 - 2. Adverse effects of neuropharmacologic agents and drug-drug interactions
 - 3. Non-invasive neuromodulation, including electroconvulsive therapy, transcranial magnetic stimulation, transcranial direct current stimulation

4. Neurosurgical interventions, including deep brain stimulation, vagal nerve stimulation, and lesional procedures
- B. Psychosocial Interventions
 1. Supportive therapy
 2. Cognitive-behavioral therapy
 3. Cognitive rehabilitation
 4. Family and systems therapy
 5. Environmental interventions
 6. Behavioral management strategies

IV. Neurobehavioral and Neuropsychiatric Syndromes [exam does not necessarily, but may include material in the following areas]

- A. Focal Neurobehavioral Syndromes, including disorders of:
 1. Arousal (e.g., coma, vegetative states, minimally conscious states)
 2. Perception (e.g., illusions, hallucinations, sensory impairments)
 3. Attention (e.g., delirium/acute confusional states, hemispatial inattention/neglect)
 4. Language (e.g., aphasias, affective aprosodias)
 5. Memory (e.g., amnesias)
 6. Praxis (e.g., apraxias)
 7. Recognition (e.g., agnosias)
 8. Executive function
 9. Social cognition (e.g., comportsment, emotional recognition, theory of mind)
 10. Motivation (e.g., apathy, abulia, akinetic mutism)
- B. Neuropsychiatric Syndromes
 1. Intellectual disabilities
 2. Communication disorders
 3. Autism spectrum disorder
 4. Attention-deficit/hyperactivity disorder
 5. Specific learner disorder
 6. Motor disorders, including developmental coordination disorder and stereotypic movement disorder
 7. Tic disorders, including Tourette syndrome
 8. Schizophrenia spectrum and other psychotic disorders
 9. Mood disorders, including bipolar, depressive, and related disorders
 10. Disorders of affect, including pathological laughing and crying (also known as pseudobulbar affect)
 11. Anxiety disorders
 12. Obsessive-compulsive and related disorders
 13. Trauma and stress-related disorders
 14. Dissociative disorders
 15. Somatic symptom and related disorders
 16. Sleep-wake disorders
 17. Disruptive, impulse-control, and conduct disorders
 18. Substance-related and addictive disorders
 19. Neurocognitive disorders, including delirium, mild cognitive impairment (i.e., Mild Neurocognitive Disorder) and dementia (i.e., Major Neurocognitive Disorder)

- 20. Paraphilic disorders
- 21. Personality disorders, including personality change due to neurological conditions
- C. Cognitive, Emotional, and Behavioral Manifestations of Neurological Disorders
 - 1. Neurodegenerative disorders
 - 2. Stroke and other cerebrovascular diseases
 - 3. Epilepsy
 - 4. Multiple sclerosis and other demyelinating diseases
 - 5. Traumatic brain injury
 - 6. Hypoxic-ischemic brain injury
 - 7. Hydrocephalus, including obstructive and normal pressure types
 - 8. Primary and secondary brain tumors
 - 9. Central nervous system infections
 - 10. Neuroendocrine disorders
 - 11. Toxic exposures/ingestions
 - 12. Metabolic disorders, including solid organ failure and transplantation and inborn errors of metabolism
 - 13. Movement disorders, including neurodegenerative, acquired, medication-induced, and psychogenic (functional) types
 - 14. Headache
 - 15. Acute and chronic pain
 - 16. Autoimmune disorders affecting the central nervous system, including autoimmune encephalopathies