

THE AMERICAN BOARD OF NEUROSCIENCE NURSING



Certified Neuroscience Registered Nurse (CNRN®)

2020 Candidate Handbook

(For candidates sitting for the exam on or after July 1, 2020)

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American Board of Neuroscience Nursing Certification Examinations

The American Board of Neuroscience Nursing (ABNN) is the independent, not-for-profit corporation established to design, implement and evaluate a certification program for professional nurses involved in the specialty practice of Neuroscience Nursing and its subspecialties. ABNN is solely responsible for the development, administration and evaluation of the certification programs. Neuroscience Nursing is the diagnosis and treatment of actual or potential patient and family responses to nervous system function and dysfunction across the healthcare continuum. The ABNN advances neuroscience nurses' practice and contributions to neurological health through certification of registered nurses.

Certification in Neuroscience Nursing is the formal recognition of the attainment and demonstration of a unique body of knowledge necessary for the practice of Neuroscience Nursing. In awarding the Certified Neuroscience Registered Nurse (CNRN) credential, ABNN recognizes nurses who demonstrate the attainment of this knowledge through successful completion of the certification examination or renewal recertification through the accumulation of continuing education credits consistent with established policies. The CNRN certification program was developed through the auspices of the American Association of Neurosurgical Nurses (now known as the American Association of Neuroscience Nurses, or AANN) in 1978 to formally recognize professional achievement and to promote excellence in Neuroscience Nursing.

I. ABNN Purposes

- Encourage the study of Neuroscience Nursing and its subspecialties
- Promote and advance the practice of Neuroscience Nursing through specialty certifications
- Determine minimum requirements for individuals who seek certification in Neuroscience Nursing and its subspecialties
- Conduct an examination for certification of qualified candidates
- Provide a mechanism for recertification in Neuroscience Nursing and its subspecialties

II. CNRN Eligibility Requirements

1. The candidate must have current, unrestricted licensure as a Registered Nurse in the United States, Canada or in any of the U.S. Territories that grant licensure utilizing the U.S. State Board Test Pool Exam or National Council for Licensure Exam. Candidates from other countries will be considered if they meet a comparable licensure requirement and can read and understand the English Language. **All candidates for the CNRN exam will be subject to an audit to validate their current licensure.**
2. The candidate must be a professional nurse engaged in Neuroscience Nursing clinical practice or as a consultant, researcher, administrator or educator who has completed and can provide documentation of at least one (1) year full-time (2,080 hours) of direct or indirect Neuroscience Nursing practice as a Registered Nurse in the last three (3) years at the time of application.
 - a. Direct Neuroscience Nursing practice is defined as involvement in the nursing process in a clinical setting where the nursing actions and judgments are focused on a particular individual, family or group of individuals where there is continuing professional responsibility and accountability for the outcomes of these actions.
 - b. Indirect Neuroscience Nursing practice is defined as involvement that includes time spent in clinical supervision of students and/or staff, research or consultation.
3. The candidate must complete the online CNRN certification application at www.abnncertification.org and submit it with the appropriate fees, all of which must be received by the ABNN Office prior to the application deadline.
4. The ABNN does not discriminate against candidates for certification on the basis of age, race, religion, sex, national origin, marital status, sexual orientation, disability or gender identity.

If you have any questions regarding eligibility, please email info@abnncertification.org.

III. Application Deadlines

Applications for each exam administration and the applicable fee **must be submitted** online at www.abnncertification.org by no later than 5:00 p.m. (Central time) by the deadlines listed below:

Application Deadline	Exam Window Begin Date	Exam Window End Date
February 6, 2020	March 1, 2020	March 31, 2020
June 4, 2020	July 1, 2020	July 31, 2020
September 3, 2020	October 1, 2020	October 31, 2020

Candidates are encouraged to submit the application and fee online well in advance of the deadline to allow time to supply any additional required information noted during the application review process. ABNN reserves the right to request additional documentation to verify experience eligibility. Deficiencies cannot be corrected after the deadline. If paying by check, complete the application online, hit "Pay via Check" and mail the check including all of the information below:

Payable to: ABNN
 Address: PO Box 3781 Oak Brook, IL 60522
 Amount: (see Fees section below)
 Applicant Name:
 Reference Number: (listed on application)

Faxed applications will not be accepted under any circumstances. Candidates should keep a copy of the application for their records. If you need assistance completing the forms, or have questions about the status of your application, contact ABNN toll-free at 888/557-2266.

IV. Examination Application Fees

If paying by credit card:

AANN Member:	\$300
Non-member:	\$400

If paying by check:

AANN Member: (check payable to ABNN)	\$325
Non-member: (check payable to ABNN)	\$425

V. Refund of Application Fees

A candidate who has not scheduled their examination date and location with the testing company who wishes to cancel their examination application must contact the ABNN office **7 days prior to the exam eligibility end date**. Exam withdrawals **received** by the ABNN office at least 7 days prior to the exam eligibility end date will receive a refund of their application fee minus a **\$100** administrative fee. **Please note:** If a candidate has already scheduled their examination date and location with the testing company, the candidate will not be eligible for a refund. An applicant who does not complete the audit process will not receive a refund.

VI. Application Audits

ABNN randomly audits 5% of certification applications. If selected for audit, the candidate's supervisor submitted on the application will receive an email to verify their work experience. Candidates will also need to upload their RN licensure in the system. Other applications may be audited at the discretion of the ABNN Board. Failure to provide requested documentation for an audit will result in the denial of the candidate's application. No refunds will be given for a candidate that does not complete the audit.

VII. Examination Administration

ABNN contracts with PSI Services to provide examination services. PSI carefully adheres to industry standards for development of practice-related, criterion-references examinations to assess competency and is responsible for administering the CNRN exam and scoring and reporting examination results.

The CNRN exam is offered three times during the year in computer-based testing (CBT) format. Examinations are delivered by computer at approximately 300 PSI test centers located throughout the United States and internationally. For a current list of sites visit: <http://online.goamp.com/CandidateHome/displayTCList.aspx?pExamID=21606>. Please note that you will be unable to register for a testing site until you have submitted and received confirmation of your completed online exam application by ABNN.

The CBT exam will be offered during the following windows:

- March 1–31
- July 1–31
- October 1–31

The examination is administered by appointment only. Appointment starting times may vary by location. Evening and Saturday appointments may be scheduled based on availability. Available dates will be indicated when scheduling your examination. Candidates are scheduled on a first-come, first-served basis.

Examinations will not be offered on the following U.S. holidays:

- New Year's Day
- Martin Luther King Jr. Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day (and the following Friday)
- Christmas Eve
- Christmas Day

VIII. Requests for Testing Accommodations

PSI complies with the Americans with Disabilities Act and strives to ensure that no individual with a disability— as defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such an impairment, or a person who is perceived by others as having such an impairment—is deprived of the opportunity to take the examination solely by reason of that disability. PSI will provide reasonable accommodations for candidates with disabilities. Candidates requesting special accommodations must call PSI at 833-333-4755 to schedule their examination once completing the online exam application.

If approved, candidates requesting special accommodations must call PSI at 833-333-4755 to schedule their examination.

1. Wheelchair access is available at all established test centers. Candidates must advise PSI at the time of scheduling that wheelchair access is necessary.
2. Candidates with visual, sensory, physical or learning disabilities that would prevent them from taking the examination under standard conditions may make a request for special accommodations and arrangements which will be reviewed by PSI.

Verification of the disability and a statement of the specific type of assistance needed must be made in writing to PSI at least 45 calendar days prior to your desired examination date by completing the Request for Special Examination Accommodations and Documentation of Disability-Related Needs forms. PSI will review the submitted forms and will contact you regarding the decision for accommodations.

IX. Scheduling an Examination Appointment

After you have registered for the examination and received notification of your eligibility by email and/or letter, you may schedule the examination by one of the following methods:

Schedule online: Schedule a testing appointment online at any time by using PSI's Online Application/Scheduling service at www.goAMP.com. To use this service follow these steps: Go to www.goAMP.com and select "Candidates".

Follow the simple step-by-step instructions to choose your examination program and register for the examination.

Schedule by phone: Call PSI toll-free at 833-333-4755 to schedule an examination appointment from 7:00 a.m. to 9:00 p.m. (Central Time) Monday through Thursday, 7:00 a.m. to 7:00 p.m. on Fridays, and 8:30 a.m. to 5:00 p.m. on Saturdays.

When you contact PSI to schedule an appointment, please be prepared to confirm a date and location for testing and to provide your name and candidate identification number (from PSI's email scheduling notice). All individuals are scheduled on a first-come, first-served basis.

X. Rescheduling an Exam Date

If you have already scheduled your date and time for the exam, you may reschedule your appointment ONCE at no charge to a date within your eligibility window by calling PSI at 833-333-4755 at least 2 business days prior to your scheduled appointment. The following schedule applies:

If your examination is scheduled on...	You must call PSI by 3:00 p.m. Central time to reschedule the examination by the previous...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday
Thursday	Monday
Friday	Tuesday

XI. Exam Window Postponement

Candidates may not extend or postpone their exam eligibility window. If you do not complete the exam before your eligibility window expires, you will be required to submit a new application and pay all associated fees.

XII. Exam Application Cancellation

If you have applied to take the CNRN examination and have not scheduled the exam date and location, and you need to cancel the application, please contact ABNN at info@abnncertification.org.

Withdrawal requests received by the ABNN office **at least 7 days** prior to the exam eligibility end date will receive a refund of their application fee minus a \$100 administrative fee. Examination withdrawals received by the office fewer than 7 days prior to the exam eligibility end date will **receive no refund**.

Missed Appointments and Forfeitures

You will forfeit your examination registration and all fees paid to take the examination under the following circumstances:

- You do not complete the audit, if selected.
- You wish to reschedule an examination but fail to contact PSI at least 2 business days prior to the scheduled testing session.
- You wish to reschedule a second time.
- You do not sit during your exam eligibility period.
- You appear more than 15 minutes late for an examination.
- You fail to report for an examination appointment.

A new, complete application and examination fee are required to reapply for examination.

XIII. Inclement Weather, Power Failure, or Emergency

In the event of inclement weather or unforeseen emergencies on the day of an examination, PSI will determine whether circumstances warrant the cancellation and subsequent rescheduling of an examination. The examination will usually not be rescheduled if the test center personnel are able to open the test center.

Visit the www.goAMP.com website prior to the examination to determine if PSI has been advised that any test centers are closed. Every attempt is made to administer the examination as scheduled; however, should an examination be canceled at a test center, all scheduled candidates will receive notification following the examination regarding rescheduling or reapplication procedures.

If power to a test center is temporarily interrupted during an administration, your examination will be restarted. The responses provided up to the point of interruption will be intact, but for security reasons, the questions will be scrambled.

XIV. Computer-Based Testing (CBT) Examination Procedures

Taking the Examination

Your examination will be given by computer at a PSI test center. You do not need any computer experience or typing skills to take your examination. On the day of your examination appointment, report to the test center no later than your scheduled testing time. Look for signs indicating PSI test center check-in. **If you arrive more than 15 minutes after the scheduled testing time, you will not be admitted.**

Identification

To gain admission to the test center, you must present two forms of identification, including one with a current photograph. Both forms of identification must be valid and include your current name and signature. You will also be required to sign a roster for verification of identity. You **MUST** bring one of the following*:

- Driver's license with photograph
- State identification card with photograph
- Passport
- Military identification card with photograph.

**No forms of temporary identification will be accepted.*

The second form of identification must display your name and signature for signature verification (e.g., credit card with signature, social security card with signature, employment or student ID card with signature). If your name on these documents is different than it appears on your identification, you must bring proof of your name change (e.g., marriage license, divorce decree, or court order).

Test Center Security

PSI administration and security standards are designed to ensure all candidates are provided the same opportunity to demonstrate their abilities. The test center is continuously monitored by audio and video surveillance equipment for security purposes.

The following security procedures apply during the examination:

- Examinations are proprietary. No cameras, notes, tape recorders, pagers, or cellular/smart phones are allowed in the testing room. Possession of a cellular/smart phone or other electronic devices is strictly prohibited and will result in dismissal from the examination.
- Calculators are not necessary as all calculations found on the examination can be performed without the aid of a calculator. However, if you wish to do so you are permitted to bring a personal calculator and use it during the examination. The only type of calculator permitted is a simple battery-powered pocket calculator that does not have an alphanumeric keypad and does not have the capability to print or to store or retrieve data. You **MUST** present your calculator to the examination proctor for inspection **PRIOR** to the start of the examination. Using a calculator during the examination that has **NOT** been inspected may result in dismissal from the examination.
- No guests, visitors, or family members are allowed in the testing room or reception areas.

Personal Belongings

No personal items, valuables, or weapons should be brought to the test center. Only wallets and keys are permitted. Coats must be left outside the testing room. You will be provided a soft locker to store your wallet and/or keys with you in the testing room. You will not have access to these items until after the examination is completed. Please note the following items will not be allowed in the testing room except securely locked in the soft locker:

- watches
- hats

Once you have placed everything into the soft locker, you will be asked to pull out your pockets to ensure they are empty. If all personal items will not fit in the soft locker you will not be able to test. The site will not store any personal belongings. If any personal items are observed in the testing room after the examination is started, the administration will be forfeited.

Examination Restrictions

- Pencils will be provided during check-in.
- You will be provided with one piece of scratch paper at a time to use during the examination, unless noted on the sign-in roster for a particular candidate. You must return the scratch paper to the supervisor at the completion of testing or you will not receive your score report.

- No documents or notes of any kind may be removed from the test center.
- No questions concerning the content of the examination may be asked during the examination.
- Eating, drinking, or smoking will not be permitted in the test center.
- You may take a break whenever you wish, but you will not be allowed additional time to make up for time lost during breaks.

Misconduct

If you engage in any of the following conduct during the examination you may be dismissed, your scores will not be reported, and examination fees will not be refunded. Example of misconduct are when you:

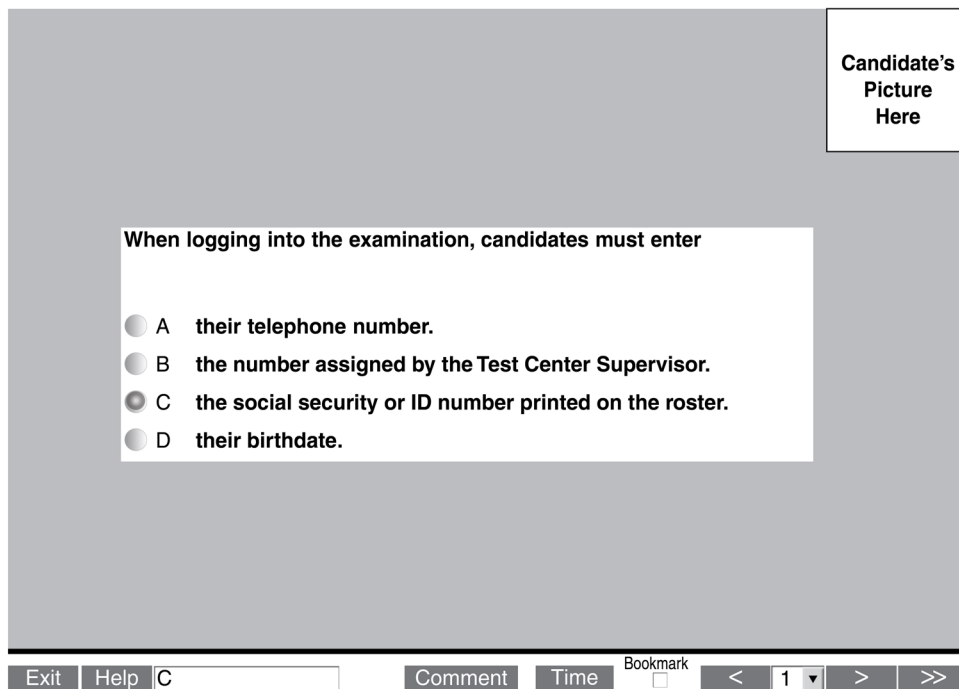
- create a disturbance, are abusive, or otherwise uncooperative
- display or use electronic communications equipment such as pagers, cellular/smart phones
- talk or participate in conversation with other examination candidates
- give or receive help or are suspected of doing so
- leave the test center during the administration
- attempt to record examination questions or make notes
- attempt to take the examination for someone else
- are observed with personal belongings
- are observed with notes, books, or other aids without it being noted on the roster.

Practice examination

Prior to attempting the timed examination, you will be given the opportunity to practice taking an examination on computer. The time you use for this practice examination is not counted as part of your examination time. When you are comfortable with the computer testing process, you may quit the practice session and begin the timed examination.

Timed examination

Following the practice examination, you will begin the timed examination. Before beginning, instructions for taking the examination are provided on-screen. The examination contains 220 questions. Four hours are allotted to complete the examination. The following is a sample of what the computer screen will look like when candidates are attempting the examination:



The computer monitors the time you spend on the examination. The examination will terminate if you exceed the time limit. You may click on the "Time" button in the lower right portion of the screen to monitor your time. A digital clock indicates the time remaining for you to complete the examination. The time feature may also be turned off during the examination.

Only one examination question is presented at a time. The question number appears in the lower right portion of the screen. The entire examination question appears onscreen (i.e., stem and four options labeled: A, B, C, and D). **Indicate your choice by either entering the letter of the option you think is correct (A, B, C, or D) or clicking on the option using the mouse.** To change your answer, enter a different option by typing A, B, C, or D or clicking on the option using the mouse. You may change your answer as many times as you wish during the examination time limit.

To move to the next question, click on the forward arrow (>) in the lower right portion of the screen. This action will move you forward through the examination question by question. If you wish to review any questions, click the backward arrow (<) or use the left arrow key to move backward through the examination.

A question may be left unanswered for return later in the examination session. Questions may also be bookmarked for later review by clicking in the blank square to the right of the Time button. Click on the double arrows (>>) to advance to the next unanswered or bookmarked question on the examination. To identify all unanswered and bookmarked questions, repeatedly click on the double arrows (>>). When the examination is completed, the number of questions answered is reported. If not all questions have been answered and there is time remaining, return to the examination and answer those questions. Be sure to answer each question before ending the examination. **There is no penalty for guessing.**

Online comments may be entered for any question by clicking on the Comment button to the left of the Time button. This opens a dialog box where comments may be entered. Comments will be reviewed, but individual responses will not be provided.

XV. Notification of Examination Results

1. All candidates will be notified of their pass/fail status with an explanation of their scaled score and the passing scaled score at the testing site. Certificates will be mailed to those who pass within 4-6 weeks of their examination date.
2. It is the candidate's responsibility to notify the ABNN office of any errors or changes in contact information prior to the examination. A \$25 fee will be assessed to correct certificates with misspelled names if the candidate does not follow the above instructions. CBT candidates are prompted to verify name and address information when scheduling their exam online.
3. In computer-delivered testing, the computer accepts responses from a keyboard or mouse in digitized form. As a result, computer-administered testing eliminates problems that may have previously arisen with scanning paper-and-pencil answer sheets, since all responses are recorded by candidates during their examination. However, verification of examination scores from electronic responses can be requested if **received by** PSI in writing within 90 days of the exam date. The verification results are sent to the candidate within six (6) weeks. The candidate must assume the cost of rescoring.

XVI. Confidentiality of Examination Results

Examination results are released only to the candidate at the close of the exam. In response to specific inquiries, and with permission of the individual CNRN, verification of current CNRN status will be provided. Group data without individual identifying information may be used for research and study purposes, and may be released to other groups with a specific interest in nursing certification.

XVII. Retaking the Examination

Candidates who do not achieve a passing score may reapply for subsequent examinations. Candidates are eligible to test one time per examination window, but may not take the test more than three times in 12 months. Repeat candidates must submit a new application and full examination fee.

XVIII. Duration of Certification

CNRN certification is effective for a period of five (5) years. The actual expiration date of a CNRN certificate is December 31st of the 5th year after certification (i.e., certification of CNRNs certified in March, July, or October 2020 expires on December 31, 2025). To renew certification prior to the expiration date, the certificant may either retake the certification exam or submit documentation of the required continuing education contact hours and work hours in neuroscience nursing during the 5th year of the certification cycle. Apply to recertify by the October 1st early bird deadline to avoid an \$85 late fee. Continuing education credits begin to be eligible toward recertification effective immediately following the month of successful examination. You may track your CE's online at www.abnncertification.org throughout your recertification cycle. ABNN will provide reminder information in the middle of the year that the candidate is due to recertify. However, it is ultimately the responsibility of the CNRN to initiate the recertification process. Applications for recertification will not be accepted prior to the 5th year of the certification cycle with an early bird application deadline of October 1st.

XIX. The CNRN Credential

Each passing candidate will receive a certificate indicating attainment of certification. Successful completion of the examination entitles the candidate to use the credential CNRN. Please note, however, that the CNRN does not replace use of the designation, RN.

XX. Revocation of Certification

Causes for revocation of certification include:

- The CNRN did not possess the required qualification and requirements for the examination, whether or not such deficiency was known to ABNN prior to the examination or at the time of issuance of the certificate;
- The CNRN made a material misstatement or withheld information on the application or in any representation to ABNN, whether intentional or unintentional;
- The CNRN engaged in irregular practices in connection with an examination, whether or not such practices had an effect on the performance of the CNRN on an examination;
- There has been a limitation or termination of any right of the CNRN associated with the practice of neuroscience nursing in any state, province or country, including the imposition of any requirement of surveillance, supervision or review by reason of violation of a statute or governmental regulation, disciplinary action by any nursing licensing authority, entry into a consent order, or voluntary surrender of license.

No certification shall be revoked unless the CNRN concerned is notified of the intent of ABNN and has an opportunity for a hearing before a select committee of ABNN. Such notification shall be sent by certified mail no less than 30 days prior to the hearing.

XXI. Irregularities in Testing

In addition to Revocation of Certification, applicants should also understand that ABNN may or may not require a candidate to retake the examination, or a portion of the examination, if presented with sufficient evidence that the security of the examination has been compromised, notwithstanding the absence of any evidence of a candidate's personal involvement in such activities.

XXII. Denial of Application and Appeal

Application to take the examination will be denied if the applicant is deemed ineligible for certification, or if documentation does not meet the requirements listed. Falsification of the application, including failure to provide material information, is grounds for denial of the application or for denial of certification. In such cases, the applicant will be notified in writing of the specific reason. There can be no appeal for failure to achieve a passing score on the examination, lack of current RN license, or failure to apply by the deadline. Any applicant whose application for certification is denied approval will automatically be sent information about how to appeal the decision, including steps in the appeal process and additional information required. Applicants denied application approval will receive a refund of the application fee, minus a \$100 administrative fee. *Note: There is no refund if an applicant fails to complete an audit.*

XXIII. Copyrighted Examination Questions

All examination questions are the copyrighted property of ABNN. It is forbidden under federal copyright law to copy, reproduce, record, distribute or display these examination questions by any means, in whole or in part. Doing so may subject the candidate to severe civil and criminal penalties.

The Examination

The CNRN examination is a generalist exam, and is not intended to emphasize any particular level of care nor any particular developmental level. The exam consists of 220 multiple-choice items with a total testing time of **four (4) hours**. Twenty (20) out of the 220 items are pretest items, which are not scored. (Note: the examination may include additional items that are being tested for future use.) Three levels of knowledge are tested: knowledge; interpretation; and problem solving and evaluation. The following lists include some of the actions associated with each of the knowledge levels.

Knowledge	Interpretation	Problem Solving and Evaluation
Define	Interpret	Compose
Repeat	Apply	Plan
Record	Use	Propose
List	Distinguish	Formulate
Describe	Analyze	Judge
Recognize	Compare	Rate
Explain	Solve	Value
Report	Inspect	Select
Review	Examine	Organize
Relate	Categorize	Evaluate

Sample Examination Questions*

- Following a cerebral vascular accident (CVA) involving the middle cerebral artery, a patient developed homonymous hemianopia. Which of the following interventions is MOST suitable as part of the rehabilitation plan?
 - Gather assessment data for a likely ophthalmology consult
 - Patch the affected eye
 - Discourage ambulation
 - Teach visual scanning techniques
- After a head injury, a patient has persistent recent memory loss. Which of the following strategies would be MOST beneficial as the patient reintegrates into the community?
 - Keep a calendar of daily activities
 - Memorize the next day's schedule every night
 - Hire a personal care assistant
 - Ask others for daily instructions
- Which of the following is the MOST suitable intervention for a patient with cranial nerve involvement due to Guillain-Barré Syndrome (GBS)?
 - Sensory checks below the level of the lesion
 - Establishing communication patterns
 - Use of neuromuscular blocking agents
 - Initiation of continuous positive airway pressure (CPAP) for respiratory management
- Of the following, which is MOST appropriate as an interdisciplinary team goal for the sensory stimulation program for a comatose patient?
 - Design a patient-centered program
 - Plan a comprehensive bowel and bladder retraining program
 - Select nationally recognized stimulation techniques
 - Develop a treatment schedule consistent with schedules of each team member

Answers: 1. d; 2. a; 3. b; 4. a

**These items are intended only as samples of the style of questions you should expect. They are not representative of the numbers of any category of question that will be included on the test.*

XXIV. Commonly Asked Questions about the CNRN Examination

How is the passing score determined?

The passing score is established by a systematic criterion-referenced procedure that employs the judgment of neuroscience nursing experts from around the country as well as the assistance of professional psychometricians from PSI. With this process, the raw score (i.e., number of correct answers) required to pass an examination form is established; that score relates to the number of correct answers that a minimally competent (borderline expert) candidate would be expected to provide. The final determination of the passing score is made by the ABNN Board of Trustees.

What is a scaled score?

Scaled scores are used to provide a consistent scale of measurement, so that from one form of the test to the next, the same scaled score represents the same level of knowledge. To calculate a scaled score, the raw score required to pass is first set equal to 200. An analogous situation is with temperature: 0 degree and 32 degrees both represent freezing on different temperature scales. Raw scores below the passing point are converted in linear fashion to scaled scores below 200; those above the passing point are similarly converted to scaled scores above 200. Although much care is taken to ensure that all forms of the examination are similar, new forms may vary somewhat in level of difficulty from earlier ones. A raw score on one may not be comparable, therefore, to a raw score on a different version. To prevent candidates who took a less difficult form of the examination from having an unwarranted advantage over those who took a slightly more difficult form, raw scores are converted to scaled scores that represent comparable levels of achievement.

The test consists of 220 questions; 200 are used to compute candidates' scores and 20 are unscored and being pretested for possible use on future test forms.

What is the best way to study for the exam?

There is no best way to study. Based on a survey of CNRN candidates, the following are summary results of how successful candidates prepared for the exam (**N= 90 respondents**):

Respondents began studying an average of 4 months prior to exam (range 1 month to 12 months), and the majority of respondents spent at least 10 hours per week studying for the exam (see table below).

<u>Hours Spent Studying Per Week</u>		
<u>Hours Per Week</u>	<u>Total Responses</u>	<u>Percentage of Responses</u>
60	1	1%
40	5	6%
20	21	23%
10	35	39%
5	16	18%
Less than 5	12	13%

Examination Preparation Methods:

Candidates utilized a variety of means to prepare for the exam. Many used multiple methods to ensure breadth in their preparation. The table below lists additional specifics of the types of preparation used.

<u>Study Methods Used in Exam Preparation</u>		
<u>Study Method</u>	<u>Total Responses</u>	<u>Percentage of Responses</u>
Review Course	51	57%
Group Study	7	8%
Independent Study	77	86%
On-line Study Course	5	6%

Textbooks/Online Materials Used:

A wide variety of texts were employed to prepare for the CNRN exam. A few example preparation products are below:

- *AANN Core Curriculum for Neuroscience Nursing*
- *AANN CNRN Online Review Course Modules*
- *AANN CNRN Self-Assessment Examination*
- *The Clinical Practice of Neurological and Neurosurgical Nursing* by Joanne V. Hickey
- *Neuroscience Nursing: A Spectrum of Care* by Ellen Barker

Journals Used:

Candidates also utilized many journals and periodicals to enhance their preparation. The three most commonly utilized were (in order of popularity based on the survey):

- *The Journal of Neuroscience Nursing*
- *The American Journal of Nursing*
- *Critical Care Nursing*

In addition, the American Association of Neuroscience Nurses (AANN) has CNRN preparation material available for purchase in their Online Store. Please visit www.AANN.org to purchase these programs. *Note: ABNN does not endorse any educational product or program.*

XXV. Scope of the Examination

Attainment of CNRN certification includes successful completion of a general neuroscience nursing exam that is intended to determine if the candidate possesses the basic knowledge needed to care for both neurosurgical and neurological patient populations competently. Just as neuroscience nursing includes caring for patients across the lifespan and in a variety of settings, the exam includes items about patients at various ages and developmental stages and in different levels of care. While questions may vary in their level of difficulty, the exam tests the candidate's knowledge of core neuroscience nursing principles.

XXVI. Examination Construction

ABNN conducted a role delineation/job analysis survey during 1996, 1997, 2001, 2005, 2009, 2014, and most recently in 2019. The revised content outline from the 2019 job analysis survey will be implemented for the July 2020 exam window. The survey examined neuroscience health problems, human responses in neuroscience disorders and specific nursing interventions used to describe Neuroscience Nursing practice. Based on the responses, the CNRN Job Analysis Task Force defined a framework for construction of the examination. Following are a detailed content outline of the exam and by categories of disorders. Although not all content or human responses are part of the CNRN Outline, the core of Neuroscience Nursing knowledge required for specialty practice is clearly represented.

XXVII. ABNN CNRN EXAM

(Based on 2019 Job Analysis Study)

Disorders - Detailed Content Outline

I. Trauma (30 items)

- A. Traumatic Brain Injury
 - 1. Blast, blunt, penetrating
 - 2. Diffuse Axonal Injury
 - 3. Contusions/Concussions
 - 4. Fractures (e.g., skull, spinal column)
- B. Hematoma/Hemorrhage
 - 1. Acute and Chronic Subdural
 - 2. Epidural
 - 3. Intracerebral
 - 4. Traumatic subarachnoid
- C. Spinal Cord Injury

II. Cerebrovascular (50 items)

- A. Ischemic Stroke
 - 1. Thrombotic
 - 2. Embolic
 - 3. Lacunar
- B. Hemorrhagic Stroke
 - 1. Intracerebral hemorrhage
 - 2. Subarachnoid hemorrhage
 - 3. Intraventricular hemorrhage
 - 4. Hemorrhagic conversion
- C. Transient Ischemic Attack
- D. Cerebral Venous Sinus Thrombosis
- E. Vascular Anomalies
 - 1. Aneurysm (Cerebral vasospasm)
 - 2. Arteriovenous malformation
 - 3. Arteriovenous fistula
 - 4. Carotid stenosis
 - 5. Cavernous angiomas
 - 6. Carotid dissection
 - 7. Vertebral dissection
 - 8. Moya Moya
- F. Anoxic Injury

III. Tumors (26 items)

- A. Brain Tumors
 - 1. Neuroepithelial Tissue (e.g., glioblastoma, astrocytoma, oligodendroglioma, embryonal tumors)
 - 2. Cranial and Spinal Nerves (e.g., schwannoma, acoustic neuroma, neurofibroma)
 - 3. Meningioma (e.g., spinal cord, intracranial)
 - 4. Hematopoietic (e.g., lymphomas, hemangioblastomas)

5. Endocrine (e.g., craniopharyngioma, pineal, pituitary)
 6. Metastatic (e.g., Leptomeningeal spread)
- B. Spinal Cord Tumors
1. Primary (e.g., ependymoma, glioma)
 2. Metastatic

IV. Infection and Immune Complications (22 items)

- I. Abscesses
- II. Meningitis
- III. Encephalitis
- IV. Amyotrophic Lateral Sclerosis
- V. Bell's Palsy
- VI. Demyelinating Polyneuropathy
 1. Guillain-Barré
 2. Acute Disseminating Encephalomyelitis (ADEM)
 3. Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)
- VII. Multiple Sclerosis
- VIII. Myasthenia Gravis
- IX. Encephalopathies (e.g., toxic, metabolic, PRES)

V. Neurodevelopmental Conditions (10 items)

- A. Cranial/Cerebral Defects (e.g., craniosynostosis, plagiocephaly, microcephaly, anencephaly)
- B. Chiari Malformation
- C. Hydrocephalus (e.g., congenital)
- D. Congenital Brain and Spinal Cord Anomalies

VI. Neurological Disorders (62 items)

- A. Partial, Generalized, Status Epilepticus, Non-epileptic Seizures
 1. Idiopathic
 2. Symptomatic
 3. Provoked
 4. Cryptogenic
- B. Headaches
 1. Acute
 2. Chronic
- C. Hydrocephalus (e.g., communicating, non-communicating, normal pressure)
- D. Pseudotumor Cerebri
- E. Pain
 1. Acute
 2. Chronic
 3. Neuropathic pain (e.g., trigeminal neuralgia, peripheral neuropathy)
- F. Dementia
 1. Alzheimer's disease
 2. Vascular
 3. Lewy body
 4. Age related memory loss
 5. Sundown syndrome

- G. Delirium
- H. Movement Disorders
 - 1. Parkinson's Disease
 - 2. Dystonia
 - 3. Benign essential tremor
- I. Chemical Dependency
- J. Degenerative Spine Disease
 - 1. Degenerative disc disease
 - 2. Vertebral compression fractures
 - 3. Lumbar spondylolisthesis
 - 4. Spinal stenosis
 - 5. Herniated nucleus pulposus
- K. Peripheral Nerve Injury

I. Physiological (54%)

A. Activity and Self-care

1. Rehabilitation (e.g., physical therapy, occupational therapy, speech therapy)
2. Neurological positioning for optimal, appropriate body alignment
3. Stabilize and immobilize (e.g., halo devices, TLSO brace, splints, cervical collars)
4. Skin care for complication prevention and wound healing

B. Bowel and Bladder Management

C. Nutrition

1. Dysphagia screening
2. Nutritional monitoring
3. Nausea and vomiting management

D. Comfort Promotion

1. Environmental management
2. Pain management modalities

E. Metabolic Management

1. Acid base
2. Fluid
3. Electrolytes
4. Glycemic management

F. Pharmacological Management

G. Neurological Management

1. Neurological assessments and monitoring
2. Diagnostic testing
3. Cerebral perfusion promotion
4. Cerebral edema management
5. Cerebral Spinal Fluid (CSF) drainage management (e.g., ventriculostomy, lumbar drain, shunts, Endoscopic Third Ventriculostomy)
6. Intracranial Pressure (ICP) monitoring and management
7. Device management (e.g., epilepsy monitoring, Vagal Nerve Stimulator, Deep Brain Stimulator, implantable pumps)
8. Dysreflexia management
9. Seizure precautions and management
10. Subarachnoid hemorrhage management
11. Tumor treating fields

H. Surgical Treatment and Management

1. Surgical indications and preparation
2. Postoperative care and prevention of complications
3. Procedural management (e.g., conscious sedation, interventional and bedside procedures)

I. Respiratory Monitoring and Airway Management

J. Thermoregulation

K. Cardiovascular Management

1. Bleeding precautions
2. Venous Thromboembolism (VTE) prophylaxis
3. Hemodynamic monitoring and management (e.g., dysrhythmia, blood pressure, shock)

II. Behavioral (21%)

- A. Cognitive Behavioral Therapy
 - 1. Overactivity/inattention/neglect modification
 - 2. Self-harm prevention
 - 3. Anxiety reduction
 - 4. Sleep hygiene and promotion
 - 5. Substance abuse treatment (e.g., alcohol/drug withdrawal, smoking cessation)
 - 6. Cognitive stimulation (e.g., memory training, speech therapy)
- B. Health Education
 - 1. Disease process
 - 2. Procedure/treatment
 - 3. Individual risk factors (e.g., activity/exercise, diet, medication, substance abuse)
 - 4. Community resources (e.g., support group)
 - 5. Psychomotor skills
 - 6. Patient specific discharge education

III. Quality of Life (12%)

- A. Coping Assistance
- B. Family
 - 1. Caregiver support
 - 2. Patient/family-centered care
- C. Culture (e.g., cultural competence, spiritual and religious support)
- D. Ethics
- E. Organ Donation
- F. Palliative Care
- G. End of Life

IV. Patient Safety (8%)

- A. Identification of Neurological Decline
- B. Abuse Protection and Support
- C. Environment Safety Management (e.g., fall prevention, suicidal precaution)
- D. Infection Prevention
- E. Physical and Chemical Restraint

VI. Health System Management (5%)

- A. Collaboration
 - 1. Transfer of care (e.g., bedside handoff, intrafacility, temporary transfer)
 - 2. Multidisciplinary collaboration
- B. Professional Competence
 - 1. Evidence-Based Practice
 - 2. Research
 - 3. Quality Improvement
 - 4. Continuing Education

REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS

If you have a disability covered by the Americans with Disabilities Act, please complete this form and provide the Documentation of Disability-Related Needs on the next page so your examination accommodations can be processed efficiently. The information you provide and any documentation regarding your disability and your need for examination accommodations will be treated with strict confidentiality.

Candidate Information

Candidate ID Number _____

Name (Last, First, Middle Initial, Former Name) _____

Mailing Address _____

City _____ State _____ Zip/Postal Code _____

Daytime Telephone Number _____

Special Accommodations

I request special accommodations for the _____ examination.

Please provide (check all that apply):

_____ Reader

_____ Reduced distraction environment

_____ Extended examination time (time and a half)

_____ Other special accommodations are needed (please specify below)

Comments: _____

PLEASE READ AND SIGN: I give my permission for my diagnosing professional to discuss with PSI staff my records and history as they related to the requested accommodation.

Signature _____ Date _____

Return this form with your Documentation of Disability-Related Needs form to:

PSI, 18000 W. 105th Street, Olathe, KS 66061-7543.

If you have any questions, call Candidate Services at 833.333.4755.

DOCUMENTATION OF DISABILITY-RELATED NEEDS

Please have this section completed by an appropriate professional (education professional, physician, psychologist, psychiatrist) to ensure that PSI is able to provide the required examination accommodations.

Professional Documentation

I have known _____ since _____ / _____ / _____ in my capacity as a

Candidate Name

Date

Professional Title

The candidate discussed with me the nature of the examination to be administered. It is my opinion that, because of this candidate's disability described below, he or she should be accommodated by providing the special arrangements listed on the Request for Special Examination Accommodations form.

Description of Disability:

Signed _____ Title _____

Printed Name _____

Address _____

Telephone Number _____

Date _____ License Number (if applicable) _____

Return this form with your Request for Special Examination Accommodations form to:

PSI, 18000 W. 105th Street, Olathe, KS 66061-7543.

If you have any questions, call Candidate Services at 833.333.4755.

REQUEST FOR DUPLICATE CNRN EXAMINATION SCORE REPORT

Directions: You may use this form to ask PSI, the testing agency, to send you a duplicate copy of your score report. This request must be postmarked no later than one year after the examination administration. Proper fees and information must be included with the request. Please print or type all information in the form below. Be sure to provide all information and include the correct fee, or the request will be returned.

Fees: \$25 U.S. Dollars per copy. Please enclose a check or money order payable in U.S. Dollars to PSI Services Inc. Do not send cash. Write your candidate identification number on the face of your payment.

Mail to: PSI

CNRN Examination
18000 W. 105th Street
Olathe, KS 66061-7543, USA

Amount enclosed: \$ _____

Examination Date: _____

Print your current name and address:

Name _____ Candidate ID _____

Street _____ City _____

State/Prov. _____ Zip/Postal Code _____ Country _____

Daytime Telephone (_____) _____ Fax (_____) _____

E-Mail

If the above information was different at the time you tested, please write the original information below:

Name _____ Candidate ID _____

Street _____ City _____

State/Prov. _____ Zip/Postal Code _____ Country _____

Daytime Telephone (_____) _____ Fax (_____) _____

E-Mail

Examination Date _____ Test Site _____

I hereby request PSI to send a duplicate copy of my score report to the first address shown above.

Candidate's Signature _____ Date _____