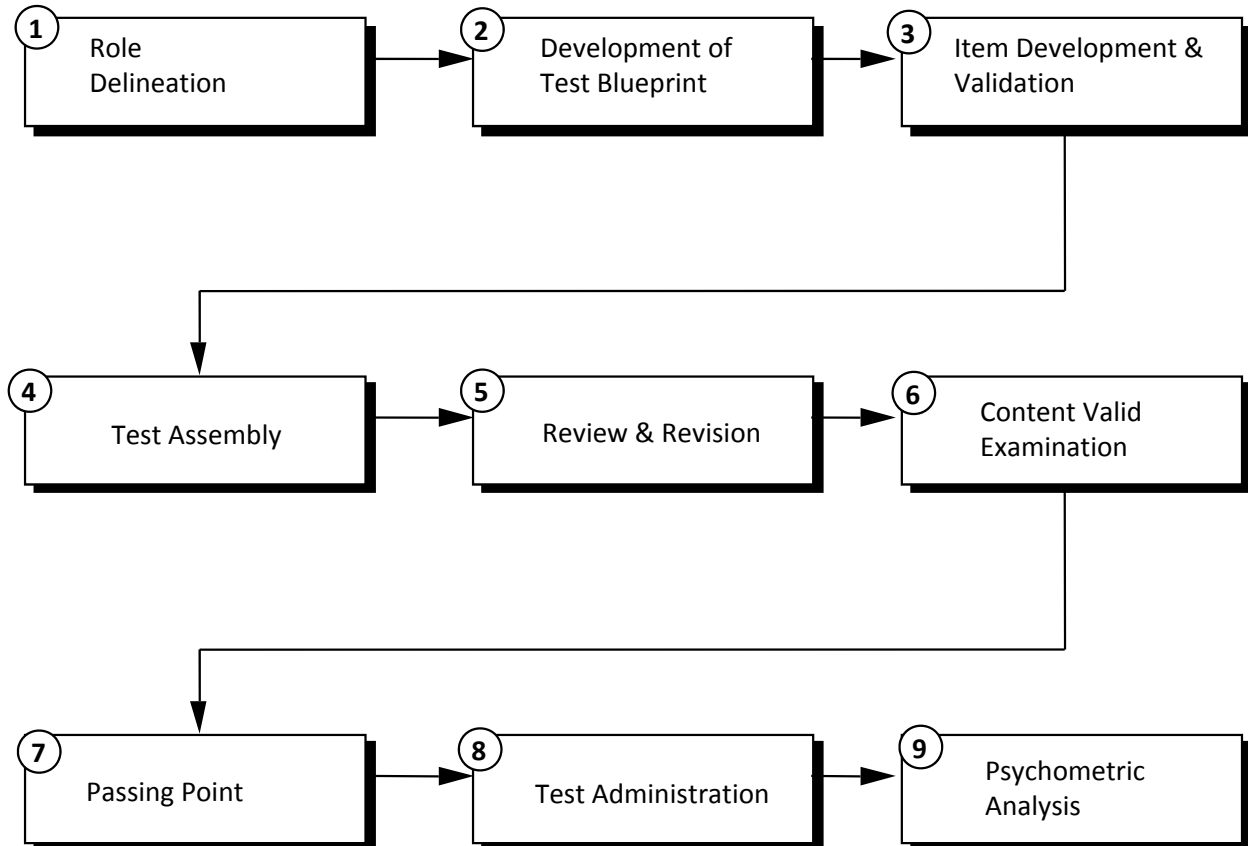




**Certification Commission
National Association Medical Staff Services
General Item Writing Guidelines**

STEPS IN THE CONSTRUCTION OF A CONTENT-VALID EXAMINATION



Role Delineation. Before developing an examination, a role delineation study determines the knowledge and skills that define a minimally competent professional in the field to be tested. Linking the knowledge and skills defined in the role delineation study to the examination content ensures that an examination is content valid. In psychometric terms, validation is how a test developer documents the competence inferred from an examination test score.

During the role delineation process, a committee of subject matter experts defines the overall performance domains associated with competent practice. These performance domains are further broken down into more distinct tasks, knowledge, and skills required on the job. The job responsibilities developed by the subject matter experts are then validated through a survey of practitioners. The practitioners review and rate the domains and tasks according to their importance, criticality, and frequency of performance.

Development of Test Blueprint. In the next step, the results from the validation survey are used to develop a blueprint, or a plan, for the examination. The information regarding the importance, criticality, and relevance of each domain and task is translated directly into the percentage of items that should be included in the examination for each content area. This blueprint guides the item development and examination assembly process and ensures that the examination reflects the relative importance of the required knowledge and skills.

Item Development and Validation. All examination items are written by experts in the practice field. Each item writer is trained in writing, reviewing, editing, and validating items. Each item is reviewed and validated by at least three other subject matter experts and must have at least two verifiable references. Each item is classified by content category, assigned a cognitive level, and validated according to its appropriateness to the certification-level practitioner. After development, items are reviewed to ensure they are psychometrically sound and grammatically correct.

Test Assembly. Each examination is created by randomly selecting the appropriate number of items from each content area, as specified in the test blueprint.

Examination Review and Revision. The draft examination is reviewed by subject matter experts for technical accuracy and by psychometric experts to ensure its psychometric integrity. At this time, item performance data are available for those items that were used on previous examination versions. Using the statistical item analyses, inappropriate or questionable items are either revised or omitted from the examination.

Content-Valid Examination. The procedures described above are accepted procedures for developing reliable and content-valid examinations. Each step in the test construction process is carefully documented. Multiple reviews by content and psychometric experts and the use of stringent criteria strengthen the validity of the test. Continuous evaluation of each examination's reliability maintains the consistency of the test to measure examinees' skills accurately.

Passing Point. A valid credentialing examination must have a defensible passing score. The cut-off score that separates examinees who pass from examinees who fail must be based on the minimum competence required to protect the public from harm. A criterion-referenced approach called the Modified Angoff Technique is often used to determine the cut score or passing point of an examination. This technique is currently considered by the testing profession to be one of the most defensible criterion-referenced methods available for setting passing points.

Test Administration. Test administration procedures must ensure consistent, comfortable testing conditions for all examinees. For secure examinations, procedures must address examinee admission into the room, seating charts, display of information signs, security, time allocation, and other aspects of the administration. Testing facilities must meet guidelines that ensure security, proper room size, ventilation, rest room facilities, handicap accessibility, and noise control.

Psychometric Analysis. Following the test administration, the item statistics are reviewed to ensure quality and validity. Items with poor performance statistics are evaluated by subject matter experts prior to scoring. These items then are tagged for review at the next meeting.

GLOSSARY OF TERMS

Like any industry, the testing and certification industries use specific terms [jargon]. Below is a partial listing of the item writing and item review jargon you may encounter. A more thorough glossary can be found in the *Technical Guidelines*, pages 24-26.

Classification System/Content Outline: An organized list or grouping by content area of the domains, tasks, knowledge, skills, and abilities.

Classification: The specific area of the examination content outline to which the item is written. Every line on the classification system/content outline is “coded” with a six-digit number. These numbers to “classify” each examination item (question) to a particular knowledge or skill on the classification system. The first two numbers indicate the domain. The next two numbers indicate the task. And, the last two numbers indicate the knowledge or skill.

Computer Based Testing (CBT): Refers to delivering examinations via computers. The examination items are presented to candidates on a computer screen. Candidates choose their answers using the computer’s mouse or keyboard, and their responses are recorded by the computer, rather than on an answer sheet.

Cut Score: A specified point on a score scale at or above which candidates pass or are accepted and below which candidates fail or are rejected. This is also sometimes called the passing score or passing point.

Discrimination: The ability of a test or a test item to differentiate among qualified and unqualified individuals by measuring the extent to which the individual display the attribute that is being measured by the test or test item.

Distractors: The options that are not correct answers. Distractors must be plausible; hence, they distract the less qualified test-taker from the correct answer.

Domain: The broad statement in the examination content outline under which knowledge and skill statements are classified. You can think of a domain as a major heading in an outline format.

Item: The entire question including the stem, distractors, and reference being submitted.

Item Analysis: The process of assessing certain characteristics of test items, specifically the item's difficulty, the discrimination power, the candidates’ mean scores, and the distractor effectiveness.

Item Bank: The collection of items for each examination, e.g., CPCS has one item bank and CPMSM has a separate item bank.

Item Difficulty: The percentage of candidates answering an item correctly. This value can be computed to provide data about first-time candidates, retake candidates, ability level, etc.

Internet-Based Testing (IBT): Rather than send the examination to each testing center on computer media (compact disc), the examination is delivered via a secure, password-protected Web site. The examination and the candidate's answers are uploaded to the test provider's secure server. Test security is assured through configuration management, controlled loading, and availability.

Key: The correct answer to the stem.

Knowledge and Skill: For each task, it is valuable to understand what knowledge and skills are essential to competent performance. The set of knowledge and skill statements clarifies the expectations. You will find the knowledge and skill statements under each task statement.

Options: The list of possible answers for an item including the correct answer.

Raw Score: The unadjusted score on a test, usually determined by counting the number of correct answers.

Reliability: The reliability of a test refers to the consistency of the test result. We interpret the reliability of a test as a measure of the likelihood that if we gave the test again under the same conditions, we would then observe the same scores.

Role Delineation Study: The process of defining the knowledge, skills, and abilities required of the minimally competent practitioner. The role delineation study typically consists of two phases:

1. Subject matter experts define the responsibilities of the minimally competent professional Individuals working in the profession.
2. A randomly selected group of practicing professionals evaluate and validate the responsibilities identified by the subject matter experts .The second phase is typically accomplished through the use of a survey.

Stem: The question being written.

Subject Matter Expert: A person with expertise in a given field or profession. Subject matter experts are used to develop the content of examinations.

Task: A task statement defines an activity that elaborates on the domain. The set of task statements in a domain offer a comprehensive and detailed description of the domain.

Test Specifications: Also called test blueprint. Test specifications identify the proportion of items (questions) from each domain and task that will appear on the examination. Test specifications are derived by combining the overall evaluations of each task's importance, criticality, and frequency and converting the results into percentages

Validation. The process of rating each test item in order to determine how important, critical, and frequently the content tested by a specific item is used for a specific job.

ITEM WRITING

All items are written by subject matter experts in the field of medical services. Each item writer is trained in writing, reviewing, editing and validating items (questions).

Each item meets the following standards:

- Classified to a category defined in the exam content outline.
- Reviewed and validated by at least three reviewers who are also subject matter experts
- Referenced to a current, reliable standard or reference relevant to the field of medical services.

During the item review, at least three reviewers must validate content, relevance to the exam content outline and validity of the reference. Only after these steps are completed is an item submitted for admission into the item bank. During the item's final review, at least two reviewers must agree on all aspects of the review before the item may be entered into the item bank.

Item writing and item review may be done electronically or may be accomplished in face-to-face meetings. All item writers must be trained in a face-to-face meeting before being allowed independent access to the online item writing tools. Item writing training is conducted utilizing a psychometrician and experts from the testing vendor as well as through interactive mentoring by trained item writers who are members of the CCN.

NAMSS Glossary of Terms: The NAMSS Interactive Glossary is the comprehensive listing of more than 300 terms, definitions and organizational acronyms that are fundamental to those working in the medical staff services profession. Terms on this glossary may be abbreviated within an item (question). A copy of this document can be found with the online references as noted below. A sample of acronyms include the following:

- **AAAH** Accreditation Association for Ambulatory Health Care
- **AANA** American Association of Nurse Anesthetists
- **ABMS** American Board of Medical Specialties
- **ACCME** Accreditation Council for Continuing Medical Education
- **ACGME** American College of Graduate Medical Education
- **ACLS** Advanced Cardiac Life Support
- **ADA** Americans with Disabilities Act
- **AHP** Allied Health Practitioner
- **AMA** American Medical Association
- **ANCC** American Nurses Credentialing Center
- **AOA** American Osteopathic Association
- **APIC** Association of Professionals in Infection Control and Epidemiology
- **CAMH** Comprehensive Accreditation Manual for Hospitals
- **CAQH** Council for affordable Quality Healthcare
- **CDC** Centers for Disease Control and Prevention
- **CDS** Controlled Drugs and Substances
- **CEO** Chief Executive Officer
- **CME** Continuing Medical Education
- **CMS** Centers for Medicare & Medicaid Services
- **COO** Chief Operating Officer
- **COP** Conditions of Participation
- **CRNA** Certified Registered Nurse Anesthetist
- **CVO** Credentials Verification Organization
- **DEA** Drug Enforcement Administration
- **DHHS** Department of Health and Human Services

- **ECFMG** Education Council for Foreign Medical Graduates
- **EMTALA** Emergency Medical Treatment and Active Labor Act
- **FACIS** Fraud and Abuse Control Information System
- **FCVS** Federal Credentials Verification Service
- **FDA** Food and Drug Administration
- **FMLA** Family and Medical Leave Act
- **FPPE** Focus Professional Practice Evaluation
- **FSMB** Federation of State Medical Boards
- **GME** Graduate Medical Education
- **GSA** General Services Administration
- **HCQIA** Health Care Quality Improvement Act
- **HEDIS** Healthcare Employers Data Information Set
- **HFAP** Healthcare Facilities Accreditation Program
- **HIPAA** Health Insurance Portability and Accountability Act
- **HIPDB** Healthcare Integrity & Protection Data Bank
- **HMO** Health Maintenance Organization
- **LIP** Licensed Independent Practitioner
- **MCO** Managed Care Organization
- **MEC** Medical Executive Committee
- **MSP** Medical Services Professional
- **NCQA** National Committee for Quality Assurance
- **NP** Nurse Practitioner
- **NPI** National Practitioner Identifier
- **NPDB** National Practitioner Data Bank
- **NTIS** National Technical Information Services
- **OIG** Office of Inspector General
- **OSHA** Occupational Safety and Health Administration
- **PA** Physician Assistant
- **RN** Registered Nurse
- **UPIN** Unique Physician Identification Number
- **URAC** Utilization Review Accreditation Commission
- **USMLE** United States Medical Licensing Exam

References: Every item written must be referenced. When developing and reviewing items within I-DEV, the online item development tool, you will find reference materials and links by selecting the Help on Writing Questions link above the stem field. In addition, you may bookmark this link:

<https://www.castleworldwide.com/idev/guidelines/CCNResources/CCNResources.html>.

The following resources are appropriate references:

- Accreditation Handbook for Ambulatory Health Care
- AAAHC Interactive Forms and Worksheets
- CMS Interpretive Guidelines for Hospitals
- *Credentialing Coordinator's Handbook*
- Comparison of Accreditation Requirements August 2010
- Health Care Quality Improvement Act (HCQIA)
- HFAP Accreditation Requirements
- HFAP Manual Updates
- HIPAA
- HIPDB Guidebook
- NAMSS Crosswalk of Standards
- NAMSS Glossary of Terms
- NCQA Standards
- NPDB Guidebook
- *Robert's Rules of Order, 10th edition*
- The Joint Commission Standards
- URAC Guidelines 6.0
- *Verify and Comply, 5th edition*

ITEM WRITING GUIDELINES

1. The stem needs to be meaningful in and of itself and present a definite problem.

An example of a poor stem is:

NCQA recognizes which date to assess compliance to timeline requirements when reviewing primary source written verification?

- A. Document date
- B. Completed application date
- C. Committee review date
- D. MSP review date

A better stem is:

Which date does NCQA recognize to assess compliance with timeline requirements when reviewing written verification?

- A. Document date
- B. Receipt date
- C. Committee review date
- D. MSP review date

2. The stem should include as much of the item as possible and be free of irrelevant material. The intent of the stem is to focus the test-taker directly on the tested information. Do not teach in the stem.

An example of a poor stem is:

A gastroenterologist is a physician that treats ailments related to the gastrointestinal areas of the body. Which of the following is a procedure that would be performed by a gastroenterologist?

- A. Colonoscopy
- B. Bronchoscopy
- C. Nasoscopy
- D. Laryngoscopy

A better stem is:

Which of the following is a procedure that would be performed by a gastroenterologist?

- A. Colonoscopy
- B. Bronchoscopy
- C. Nasoscopy
- D. Laryngoscopy

3. Avoid negatively stated stems and words such as NOT or EXCEPT.

An example of a poor stem is:

Which adverse action is **NOT** reportable to the NPDB?

A better stem:

Which adverse action is reportable to the NPDB?

- 4. All distractors must be plausible. The CCN currently requires one correct answer (key) and three plausible distractors to each item. Distractors need to be similar in length, complexity, vocabulary, grammatical construction, etc. A common mistake of item writers is to make the correct response either far longer or far shorter than the distractors.**

An example of a poor stem is:

Which term is used by NCQA to define an area of practice?

- A. Specialty
- B. Board specialty
- C. Certification
- D. Primary Care

A better example is:

Which term is used by NCQA to define an area of practice?

- A. Specialty
- B. Specialist
- C. Board certification
- D. Primary care provider

- 5. Do not use “all of the above” AND “none of the above” as distractors. If a candidate can eliminate one of the other distractors, then “all of the above” is also eliminated. Similarly for “none of the above”. This creates a situation where a candidate guessing the correct response is substantially improved.**
- 6. Avoid using terms like “always” and “never”. Candidates may use these terms in eliminating distractors.**
- 7. When writing an item, it must be referenced to a published source. The golden standard is to tie an item to a current accreditation standard. References are available to item writers online in the item writing online tool. References need to be as specific as possible, e.g., MS.01.01.01, EP12; NCQA CR12 Element B, ...**

8. Each item must be classified according to an appropriate classification number. The classification number represents the content area that a specific item is testing. Each classification number contains six digits. The first two digits represent the domain being tested, the second two digits represent the task statement being tested, and the last two digits represent the knowledge or skill statement being tested. For example: 010105 represents domains 1, task 1, and knowledge and skill statement 5. For accreditation purposes, each item must reflect a single specific knowledge or skill. In order for the exam to be legally defensible, each item must be tied to the exam content outline.
9. Trick questions are not to be employed. Each item must contain one correct answer and three plausible but incorrect distractors.
10. Use vocabulary appropriate for the target audience. Use acronyms only that are contained in the NAMSS glossary of terms and that are appropriate to the medical services professional industry.
11. Avoid excessive verbiage in the stem. The intent of the stem is to focus the candidate on the decision that will demonstrate the candidate's knowledge. The CCN strives to have items that take less than 90 seconds to read and answer.
12. All items must be in the form of a question. Open ended items are not acceptable.

An example of a poor stem is:

Medical services professional certifications include:

- A. CPCS and CPMSM
- B. CPHQ and RHIT
- C. ACHE and CCP
- D. SPHR and ASTD

A better example is:

Which of the following are medical services professional certifications?

- A. CPCS and CPMSM
- B. CPHQ and RHIT
- C. ACHE and CCP
- D. SPHR and ASTD

ITEM WRITING TIPS

As you write test items, please keep these things in mind.

The Certified Professional

Review the description [education and experience] of the professional eligible for sit for the certification examination. Keep the levels of education and experience in mind as you write items). Remember: you are more qualified than this professional. Please think of an appropriate professional you have worked with or mentored as you write new items.

The Credentialing Profession

As you write new items, think about professional problems or dilemmas you encounter on a regular basis. Alternately, think of situations you encounter less frequently, but whose outcomes have a critical effect on the functioning of your organization. Do these items address these problems or dilemmas?

References

Each item must be substantiated by a published reference. This reference must be considered a standard, widely recognized text within your professional discipline.

The Stem

As you write the item stem, please ask yourself the following questions.

- ❖ Is the item *specific* and *concise*. More words do not equal more quality.
- ❖ Does the item address one fact or one principle?
- ❖ Does the item use active voice?
- ❖ Does the item contain negative words? Negative items can be tricky for test-takers.

The Correct Answer

The correct response should be the option that a highly competent professional, remember the CCN eligibility standards, could formulate mentally after reading or hearing the item. It must be clearly worded and reflect widely accepted professional practice. It should be unique in comparison to the other answer options; no item should have more than one correct response listed.

The Distractors

The incorrect responses, called distractors, should be wrong, but plausible. You might begin by thinking about common professional myths, urban legends, and misunderstandings. Also, think about solutions that might work in situations similar to (but different from) the one stated in the stem. The distractors should be answer options that a highly competent professional would rule out immediately, but that a minimally competent or incompetent professional would have to think about. Make sure the distractors and the correct answer to the item are grammatically consistent with each other and relatively equal in length.

The Classification

As you note the classification, make sure the question is referenced to the correct knowledge or skill statement on the classification system.

ITEM WRITING ONLINE

Item writers might develop items using Castle Worldwide's online development tool, I-DEV. The online tool will allow you to write four-option multiple-choice items for inclusion in the CCN item banks of certification items.

To access the tool, please go to www.castleworldwide.com/idev. You will be directed to the security agreement.

- If you are new to I-DEV and have not completed the security agreement, then you will need to complete the entire security agreement, including your first name, last name, e-mail address, and assigned username, before you can begin item writing. The assigned username will be provide to you prior to your first item writing assignment.
- If you have already completed the security agreement, then you can return to I-DEV and assess the CCN project using this link: www.castleworldwide.com/idev/asp/get_password.asp.

Writing with a Mentor: As part of the item writing process, you have been paired with a mentor, an experienced CCN item writer who will review your items as the items are written to offer item writing and content-level suggestions to improve the quality of the item. Please review the role/responsibility information below on working with a mentor. Your mentor will be identified prior to each item writing assignment.

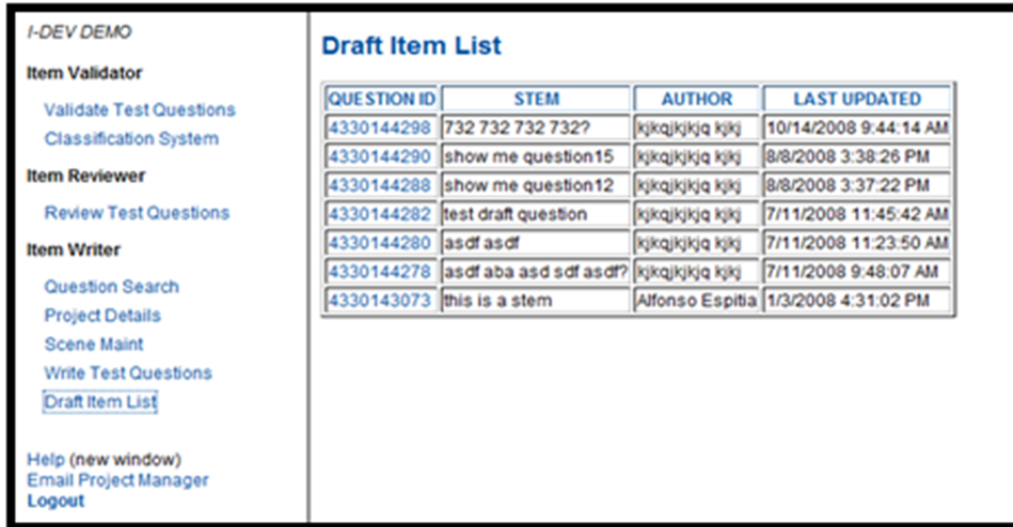
The Role of the Mentee (Item Writer): As a mentee item writer, you will use the Save Draft and Release Draft Question checkbox when you finish writing an item. This submission method will send your draft item to your assigned mentor. Once the mentor has reviewed your item, it will be returned to your Draft Item List.

The mentor will review each item on content, editorial, and psychometric principles. You may find notes from your mentor in the Comments field at the bottom of the Question screen. You and your mentor should keep the notes brief and constructive and please date them (mm/dd/yyyy). The mentor should not make changes to the items; rather, the mentor should provide instructions to you, the item writer, so you can make the modifications.

Workflow: The item writer/mentor will pass questions back and forth using the Save Draft and Release Draft Question checkbox until the question is ready for submission. Once the item has been “approved” by the mentor, you as the item writer should submit the item. To do this, open the item from the Draft Item List (described below) and use the Submit for Review option at the bottom of the Question screen.

Draft Item List

Under Draft Item List, you will see in-progress items. Depending on the particular project's setup, you may see only your draft items or you may see draft items for all item writers in the project.



QUESTION ID	STEM	AUTHOR	LAST UPDATED
4330144298	732 732 732 732?	kjkqjkjkq kjkj	10/14/2008 9:44:14 AM
4330144290	show me question15	kjkqjkjkq kjkj	8/8/2008 3:38:26 PM
4330144288	show me question12	kjkqjkjkq kjkj	8/8/2008 3:37:22 PM
4330144282	test draft question	kjkqjkjkq kjkj	7/11/2008 11:45:42 AM
4330144280	asdf asdf	kjkqjkjkq kjkj	7/11/2008 11:23:50 AM
4330144278	asdf aba asd sdf asdf?	kjkqjkjkq kjkj	7/11/2008 9:48:07 AM
4330143073	this is a stem	Alfonso Espitia	1/3/2008 4:31:02 PM

To access an item on the Draft Item List, click the Question ID, which is a hyperlink to the item. The hyperlink will display the Write Test Questions screen for this item. You can make modifications and submit/save draft as noted above.

Saving/Sending Items: Here is a quick primer on saving your draft items and sending your draft items for review by your mentor.

If you are writing an item and want to return to the item later to make changes or modifications, click the **Save Draft** button at the bottom of the item-writing screen. The item will go to your Draft Item List. You can return to the item through the Draft Item List. Click the Question ID and your item will appear.

If you have finished writing an item and want to send the item to your mentor for comment, check the **Release Draft Question** checkbox at the bottom of the item-writing screen and click **Save Draft**. The item will go to your mentor. When your mentor finishes her review, she will return the item to you using the same technique. Then, you will see the item in your Draft Item List.

If your mentor has approved your item, click the **Submit For Review** button at the bottom of the item writing screen. The item will go the next round of item review.

References: Links to available references can be found within I-DEV. When you are viewing the Write Test Questions page, click the Help on Writing Questions link above the stem field. You will see a listing of references and collateral materials.

ITEM REVIEWER CHECKLIST

As you review any item, please keep these questions in mind. You should be able to answer “yes” to each question.

- Is the item classified to the correct knowledge/skill area within the classification system?
- Is mastery of the knowledge tested by this item essential for competent practice?
- Is the item focus on current standards of practice?
- Is the item reference complete?
- Is the item appropriate for the entry-level test-taker (grammar, structure, jargon)?
- Is the item free from demeaning, offensive, or stereotypical content?
- Is the question stem specific and concise?
- Does the item stem test the candidate’s knowledge of facts and principles?
- Is the item stem use active voice and avoid negatively worded options?
- Is the keyed answer correct?
- Does a correct response to the item differentiate adequate from inadequate performance for the certification professional?
- Can the keyed answer be defended if necessary?
- Are the distractors incorrect but still plausible?
- Could a test-taker read and answer the item in 120 seconds?

VALIDITY RATINGS

INSTRUCTIONS: Use the following ratings when judging each item in terms of importance, criticality, and frequency for the certification professional.

Importance: How essential is the subject matter of the item to the competent performance of the certification professional?

- 0 = Of No Importance
- 1 = Of Little Importance
- 2 = Moderately Important
- 3 = Very Important
- 4 = Extremely Important

Example: *It is important that we adhere to best practice in our professions. (Doing so helps to ensure that we do well for our clients and other stakeholders.)*

Criticality: To what degree would the inability to use the subject matter of the item be seen as causing harm to the stakeholders? (Harm may be seen as physical, psychological, emotional, legal, or financial)

- 0 = No Harm
- 1 = Minimal Harm
- 2 = Moderate Harm
- 3 = Substantial Harm
- 4 = Extreme Harm

Example: *It is critical that workers on high-rise buildings maintain a grip on the hammers. (Failure injures the public walking below, and impacts other stakeholders such as employers, insurers, etc.)*

Frequency: Frequency refers to the time that the competent certification professional spends applying the subject matter tested in the item.

- 0 = Never
- 1 = Rarely
- 2 = Sometimes
- 3 = Often
- 4 = Repeatedly

Example: *It is both important and critical that lifeguards know CPR, but they don't use that skill often.*



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