CRISC® ITEM DEVELOPMENT GUIDE

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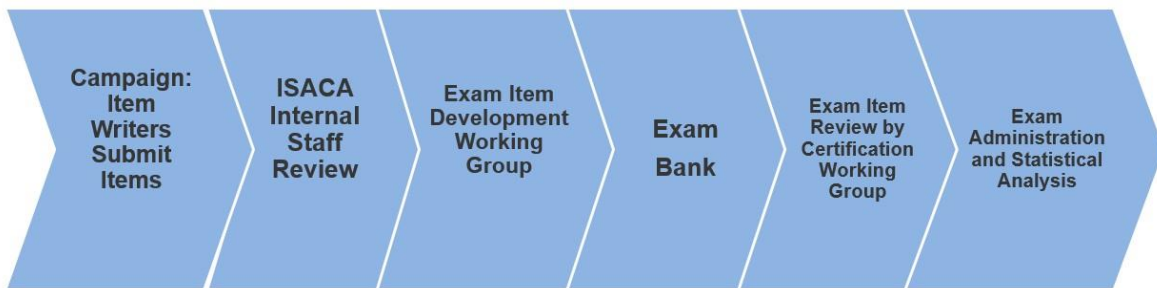
PURPOSE OF THE CRISC ITEM DEVELOPMENT GUIDE

The purpose of the CRISC Item Development Guide is to assist item writers in their efforts to write new items for the CRISC exam. This guide is intended to familiarize writers with the item development process and provide tools to help create quality exam questions.

As you read through this Guide, please pay particular attention to the item writing principles. Applying these principles will greatly increase the chances of your items being accepted for the CRISC exam.

THE CRISC ITEM WRITING AND REVIEW PROCESS: AN OVERVIEW

Campaign: Item Writers Submit Items → ISACA Internal Staff Review → Exam Item Development Working Group → Exam Bank → Exam Item Review by Certification Working Group → Exam Administration and Statistical Analysis

ISACA conducts item writing campaigns each year to generate new items for the CRISC exam. You will receive an invitation to the campaign from our online item writing system, along with instructions for how to use the system to create and submit new items for review. Resources and guidance will also be available throughout each campaign to assist you.

Once you have submitted a new item, a member of the ISACA Item Development team will review the item for adherence to ISACA's item writing guidelines. ISACA staff reviewers are not subject matter experts; however, they are exam development experts and understand the types of questions that test well or poorly. While the ISACA staff review typically does not focus on the content of the item, they may provide suggestions for alternate wording to enhance the clarity of the text. Items that need revision to meet ISACA's guidelines are returned to the writer with feedback and can be resubmitted at any time before the campaign's final deadline.

Once ISACA staff members determine that an item is ready to move forward, the item will then be included for review by the CRISC Exam and Item Development Working Group (EIDWG), which is a panel of CRISC subject matter experts from a variety of industries and regions. The Working Group meets a few weeks after the conclusion of the campaign to review the items with a focus on the content being tested. Items accepted by the Working Group go directly into ISACA's exam banks, and the item writer is paid an honorarium and awarded CPEs for each item accepted.

Items that are not accepted by the Working Group are returned to the writer after the meeting with feedback from the Group.

While initial feedback from ISACA staff takes place on an ongoing basis during the campaign, final results from the EIDWG are typically available the week following the Working Group meeting. This means that once a campaign closes, feedback from the Working Group will not be available for approximately 4-6 weeks, depending on the meeting date.

TRAINING FOR NEW WRITERS

All new item writers are required to complete an online training program before participating in a regular CRISC campaign. Writers enrolled in a training program are assigned to a member of the ISACA Item Development Team, who will provide detailed feedback on submissions to help writers become familiar with the process and principles behind effective CRISC item writing. Upon completion of the training program, writers become eligible to participate in our CRISC item writing campaigns.

WRITING QUALITY ITEMS

ISACA and the CRISC Certification Working Group periodically perform a CRISC job practice analysis study to determine the tasks and knowledge currently required of IT professionals working in the areas of risk and control. The results of this analysis serve as the blueprint for the CRISC exam and the CRISC review materials. Exam questions must be written to test a candidate's knowledge of established content areas defined by the CRISC exam content outline. Each item must be assigned by the writer to a task and a knowledge statement from the content outline, which is made available to writers at the beginning of each campaign.

When writing CRISC items, it is necessary to consider the exam's target audience, which is the minimally competent CRISC candidate. Items must be developed at the proper level of experience expected of the individual just passing the CRISC exam. To qualify for the CRISC certification after passing the CRISC exam, one must have at least three (3) years of cumulative work experience across a minimum of two CRISC domains.

Item writers must also keep in mind that because the CRISC exam is administered globally, the content and wording of items must be universally applicable to the international community of IT risk professionals.

CRISC TERMINOLOGY

Because foundational terms such as "risk," "vulnerability" and "threat" are commonly misused in the industry, consistent use of these terms should be used in exam questions and answers. To standardize test language, please keep in mind that:

- "Risk" refers to the likelihood (or frequency) and magnitude of loss that exists from a combination of assets, threats, and control conditions. As a derived value, the word "risk" should not be used in the plural form (i.e. "risks"). Consequently, when referring to conditions that represent some amount of risk, please use the terms "risk factors" or "risk scenarios." Be careful not use the terms "risk," "threat," or "vulnerability" interchangeably.
- "Threat" refers to actions or actors that may act in a manner that can result in loss or harm.
- "Vulnerability" refers to control conditions that are deemed to be deficient relative to requirements or the threat levels being faced.
- "Risk owner" refers to the person in whom the organization has invested the authority and accountability for making risk-based decisions and who owns the loss associated with a realized risk scenario. (Scope note: the risk owner may not be responsible for the implementation of risk treatment.)

ITEM FORMATS

The CRISC exam consists of multiple-choice items. The multiple-choice item is the most commonly used type of test question in certification exams. Multiple-choice items consist of a stem and four possible alternatives.

Item Stem:

    The item stem contains the introductory statement to be completed or question to be answered. The stem often includes context describing a situation or circumstance related to the knowledge being assessed. Stems are usually written as direct questions, though sometimes stems are written as incomplete sentences to improve readability.

Item Choices (Alternatives):

    The alternatives complete the introductory statement or answer the question and consist of one correct answer (key) and three incorrect answers (distractors).

Key:

    The key must reflect current practice. In some cases, the key will be the only correct alternative, while in other cases the key will be deemed to be the BEST alternative when considered against the others provided.

Distractors:

> Distractors are the incorrect alternatives, and writing effective distractors is one of the most challenging aspects of item writing. Distractors must be wrong answers, but they must appear to be plausible or possible answers to candidates who are not knowledgeable enough to choose the key.

As mentioned above, the majority of CRISC exam items use a direct question format, as in the following example. (Please note that any items in this Guide will not appear on future exams.)

> **Stem**: Which of the following is the **MOST** important enabler of effective risk management?
>
> **Alternatives**:
> A. Support of senior management (Key)
> B. Implementation of proper controls
> C. Documentation of risk-related policies
> D. Continuous monitoring of industry threats

Sometimes an incomplete statement is used in the stem, which looks like this:

> **Stem**: The **MOST** important enabler of effective risk management is:
>
> **Alternatives**:
> A. support of senior management. (Key)
> B. implementation of proper controls.
> C. documentation of risk-related policies.
> D. continuous monitoring of industry threats.

Note that the responses for this item are followed by a period, as the response serves to complete the sentence started in the stem.

ITEM TYPES TO AVOID

Items with the following issues will be returned to the item writer for revision by ISACA staff:

1. Items that ask a negatively phrased question – that is, asking which alternative does NOT apply, or which alternative is LEAST preferred. Negative questions require candidates to reverse their traditional mode of thinking and tend to test poorly based on statistical analysis.
2. Items that ask a true/false question or ask which of the alternatives is a true statement.
3. Items with alternatives in a "multiple-multiple" format – that is, components of some alternatives are contained within others. It is permissible to use lists in answer choices, but no element contained in one choice should be repeated in any other choice.
4. Items with alternatives such as "All of the above", "None of the above" or "Both B and C". Each alternative must be able to stand alone. (Along these lines, alternatives such as "Take no action" or "Ignore this issue" are usually too close to "None of the above". Such alternatives make poor distractors and should also be avoided.)
5. Items that use a fill-in-the-blank format.
6. Items that test knowledge of vendor-specific products or region-specific regulations.
7. Items that directly test knowledge of the meanings of terminology. Remember that the CRISC exam is an experience-based exam - a definitional question can be answered by an otherwise inexperienced candidate who happens to have studied a review manual or other reference, and so such questions do not require candidates to rely on their professional experience to answer correctly.

STEPS TO WRITING ITEMS

STEP 1   Select a topic from the CRISC exam content outline for your new item. Items should be written to test knowledge necessary to perform a specific task, and they should focus on a single topic area rather than trying to test multiple concepts at once.

STEP 2   Write the item stem and key (correct answer). **When submitting items, you should always make choice A the correct answer.**

STEP 3   Develop plausible distractors. Distractors should not include made-up words or phrases, and they should appear to be correct alternatives to an inexperienced exam candidate. It may help when creating distractors to consider what an inexperienced IT risk professional might think the correct answer would be, or to ask colleagues what sorts of mistakes they can imagine an inexperienced professional making.

STEP 4   In the space provided for rationales, include an explanation of why the key is correct, as well as why each distractor is not a correct alternative. This helps ISACA reviewers and the Working Group understand your intended testing concept.

STEP 5   Include any reference sources that support your item. Submitted items must include at least one reference, and the ISACA web site may be consulted for applicable references – http://www.isaca.org/knowledge-center.

STEP 6   Review the item using the Item Writing Checklist at the end of this section.

STEP 7   Have a peer or colleague review and critique the item.

GOOD PRACTICES FOR ITEM WRITING

1. Ensure the item is testing only one concept and reflects the chosen topic and supporting task statements. Items that attempt to test multiple concepts at once are typically returned for being unclear or potentially confusing.
2. Ensure the item is appropriate for a CRISC candidate with three years of experience – not too fundamental or easy, not too advanced or difficult.
3. Ensure the stem and alternatives are concise and do not contain unnecessary detail or explanation. Keep in mind that a candidate has only a short time to read, understand and answer each question on the exam.
4. Ensure the item is not "teaching" the candidate – that is, explaining a concept explicitly within the stem or alternatives.
5. Ensure the key would always be the correct or best available answer for the situation presented in the stem. Items are often returned because they do not provide enough context for a candidate to arrive at the correct answer without making assumptions, or because the correct answer could vary depending on the organization or its circumstances.
6. If the item is testing roles and responsibilities, ensure the correct answer is not dependent on the organization's size, structure or other organization-specific factors.
7. Ensure the wording of the item does not introduce subjectivity – words such as "commonly", "frequently" or "rarely" are dependent on interpretation and should be avoided.

8. Ensure that absolute words such as "all", "always" or "never" are not used – it is often too easy for exam candidates to rule out distractors with this wording.
9. Ensure that personal or gender pronouns (you, your, she, he, her, his, etc.) are avoided, as well as ad hoc organization names such as "Company XYZ".
10. If an important word appears in both the stem and the key, that same word should appear in at least one distractor as well, so the candidate is not inadvertently given a clue to the correct answer.
11. Ensure the alternatives are compatible with the stem. For example, if the question begins with "Which of the following controls…," all the alternatives should be controls.
12. Ensure any terminology or practice referred to in the item is globally familiar and in current use.
13. Ensure the alternatives do not introduce new information that is not apparent from the stem. Candidates should be able to begin formulating an answer even before viewing the alternatives.
14. Ensure all alternatives are roughly the same length and are constructed similarly. For example, if the key starts with a verb ending in "ing", the distractors should also start that way. This keeps certain alternatives from standing out unnecessarily.

ITEM WRITING CHECKLIST

1. Does the item have any of the issues listed in the Item Types to Avoid section above? If so, those issues must be addressed prior to submission.
2. Does the item adhere to the item writing guidelines presented in the Good Practices for Item Writing section above?
3. Has the item been checked for grammar and spelling, and is it easily understood on first reading? Remember that the candidate does not get to see the rationales for the stem and alternatives during the exam, so if one has to read the rationales to understand the item, the item probably needs clarification.
4. Have task and knowledge statements from the exam content outline been selected for the item, and does the item's testing concept align with them?
5. Have rationales been included for the stem and alternatives?
6. Has at least one reference been provided for the item?

EXAMPLE ITEMS

Here are some examples of <u>potential issues</u> you may encounter when constructing items.

Example 1:

Stem: Which of the following would present the **GREATEST** risk when discovered during user access testing for a mission-critical server?

Alternatives:
- A. Access is not based on least privilege. (Key)
- B. Access to sensitive data tables was granted without approval forms.
- C. Access reviews are not performed by the data owner.
- D. Monitoring of access is not performed by the data owner.

This item would most likely be returned to the item writer as too subjective because any of these issues could represent the greatest risk in certain situations. Additional context is needed to enable candidates to choose one best answer without having to assume information not provided in the stem.

Example 2:

Stem: Which of the following would be of **MOST** concern regarding automated vulnerability and penetration testing?

Alternatives:
- A. The testing is conducted during peak processing hours. (Key)
- B. An intrusion detection system is enabled during the testing.
- C. Access is denied while scanning the firewall.
- D. The testing consumes a large percentage of available system resources.

The most significant issue with this item is that choice D (excessive consumption of system resources) can be considered as the undesirable effect of choice A (conducting the testing during a period of peak demand for those resources). Therefore, it would not be fair to penalize a candidate for selecting choice D. The two choices are too closely related as written, and the best approach here would be to create a new distractor to replace choice D.

Another problem found here is that choice C may not be clearly understood – it is not apparent what type of access is being denied or why denying access would be a plausible concern in this context. This distractor would need to be either clarified or replaced.

Example 3:

Stem: An intrusion prevention system does which of the following?

Alternatives:
A. Prevents attacks that occur from affecting the target system (Key)
B. Stops all network traffic that is part of an attack before that traffic can get to the intended victim
C. Constantly modifies operating systems to make them a moving target
D. Launches attacks against attacking systems to bring them down or disable them

Notice that a key word from the stem ("prevention") leads to the word "prevent" in the answer, giving the candidate an inadvertent clue. If a key word from the stem is repeated in the key, the remedy is to either remove the word from the key or add it to at least one distractor. Also, the use of an absolute word ("all") in choice B unnecessarily makes it easier to rule out, while the use of "constantly" in choice C is open to interpretation.

If you need assistance or have questions related to the item writing process, please contact us at itemwriting@isaca.org.