

Multiple Choice (MC) Questions

1 – Use plausible distractors (*wrong-response options*)

- Only list plausible distractors, even if the number of options per question changes.
- Write the options so they are homogeneous in content.
- Consider using answers given or collected in previous open-ended exams to provide realistic distractors.

2 – Use a question format

- Write your multiple-choice items as questions (rather than incomplete statements).

Incomplete Statement Format (Less Effective)

The capital city of California is _____.

Direct Question Format (More Effective)

In which of the following cities is the capital of California?

3 – Emphasize higher-level thinking

- Use memory-plus-application questions. These questions require students to recall principles, rules or facts in a real-life context.
- The key to preparing memory-plus-application questions is to place the concept in a real-life situation or context that requires the student to first recall the facts and then apply or transfer application of those facts into a situation.

Examples

Memory Only (Less Effective)

Which description best characterizes whole foods?

- a. orange juice
- b. toast--
- c. bran cereal
- d. grapefruit

Memory-Plus-Application Example #1 (More Effective)

Vasudha's breakfast this morning included one glass of orange juice (from concentrate), one slice of toast, a small bowl of bran cereal and a grapefruit. What "whole food" did Vasudha eat for breakfast?

- a. orange juice
- b. toast
- c. bran cereal
- d. grapefruit

Memory-Plus-Application Example #2 (More Effective)

Which one of the following best illustrates the law of diminishing returns?

- a. The demand for a farm product increased faster than the supply of the product.
- b. The population of a country increased faster than the means of subsistence.
- c. A machine decreased in utility as its parts became worn.
- d. A factory doubled its labor force and increased production by 50 percent.

Ability to Interpret Cause-and-Effect Relationships (More Effective)

Why does investing money in common stock protect against loss of assets during inflation?

- a. It pays higher rates of interest during inflation.
- b. It provides a steady but dependable income despite economic conditions.
- c. It is protected by the Federal Reserve System.
- d. It increases in value as the value of a business increases.

4 – Provide three to five possible answer choices

- Provide a minimum of three, but not more than five—at RPC we tend to shoot for four—plausible and attractive options for each item.
- Distracters should include errors that students are likely to make.
- Having more than five items to choose from makes MC questions unnecessarily difficult.

5 – Keep option lengths similar

- Avoid making your correct answer the long or short answer.

6 – Balance the placement of the correct answer

- Correct answers are usually the second and third option of four. There's no need to make the distribution perfectly balanced but spread correct answers around.

7 – Use complete sentences and correct grammar

- Use simple, precise and unambiguous wording.
- Students/learners will be more likely to select the correct answer by finding the grammatically correct option. Lean on an editor and/or quiz testers to help you make sure *all* answer choices are grammatically correct.

8 – Avoid unintentionally providing clues to the correct answer

- Avoid answering one question in the test by giving the answer somewhere else in the test.
- Have the test reviewed by someone—an editor or quiz-tester—who can find mistakes, clues, grammar and punctuation problems before you give the exam to students.
- Avoid extremes—e.g., never, always, only.
- Avoid nonsense words and unreasonable statements.

9 – Avoid negative questions

- Testing experts recommend avoiding negative questions, for example, “Which of the following is NOT...?”
- Students can often find an incorrect answer without knowing the correct answer.

Example:

When is it NOT a good idea to avoid negative questions?

- a. Never
- b. Sometimes
- c. Always

10 – Use only one correct option (or be sure the best option is clearly the best option)

- The test item should include one and only one correct or clearly best answer.
- With one correct answer, alternatives should be mutually exclusive and collectively exhaustive (not overlapping).
- Using MC questions containing more than one right answer lowers discriminatory thinking.

11 – Use only a single, clearly-defined problem and include the main idea in the question

- Students must know what the problem is without having to read the response options.

12 – Avoid the options “all the above” and “none of the above”

- With *all of the above*, students often need only recognize two correct options to get the answer correct.
- With *none of the above*, you will never know if students know the correct answer.

13 – Don’t use a MC question when another type of question is more appropriate

- Consider other question styles—multiple response, true-false, sequence, etc.

14 – List numerical answers in a series

- The distracters and the correct answer for a question w/ numerical answers should be listed in series (e.g., ascending or descending).

Multiple-Response Questions

A multiple-response (MR) question requires that the user/test-taker choose more than one correct answer. It usually includes a statement such as “Choose *all* that apply.”

Go easy on use of multiple-response questions

- These questions, while easy to generate, can be extremely difficult to answer. Sometimes these become patently unfair in their difficulty.

Keep the total of possible responses to five or less

- Having more than five items to choose from makes MR questions unnecessarily difficult.

True-False***Keep T/F questions to a minimum***

- Well-crafted T/F questions can be very useful, don’t be afraid to use them.
- We use a rule of thumb at RPC that *no more than 15% of questions should be T/F*.
- Be fair w/ T/F questions. Don’t make the correctness of an answer dependent on recognizing the presence or absence of a trivial detail.

Sequence

Sequence questions ask the learner to put items in order.

Keep the total of possible responses to seven or less

- Unless the content of the course demands it, having more than seven items to put in order from memory makes sequence questions unnecessarily difficult.

Other General Recommendations

Randomization

- Consider using a [random number generator site](#) to help you randomize questions and answers.

Brevity

- The focus of our courses is typically on performance/work-outputs, so we like to test only on knowledge that is absolutely necessary for accomplishing desired outputs of a unit or module. Because of this, we try to keep our quizzes brief, usually no more than 10 questions per module. This may vary depending on the length of the module.

Original sources for the content in this document include:

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 - Thiagi – www.thiagi.com
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