



WRITING SINGLE-BEST ANSWER MULTIPLE CHOICES QUESTIONS (MCQs)



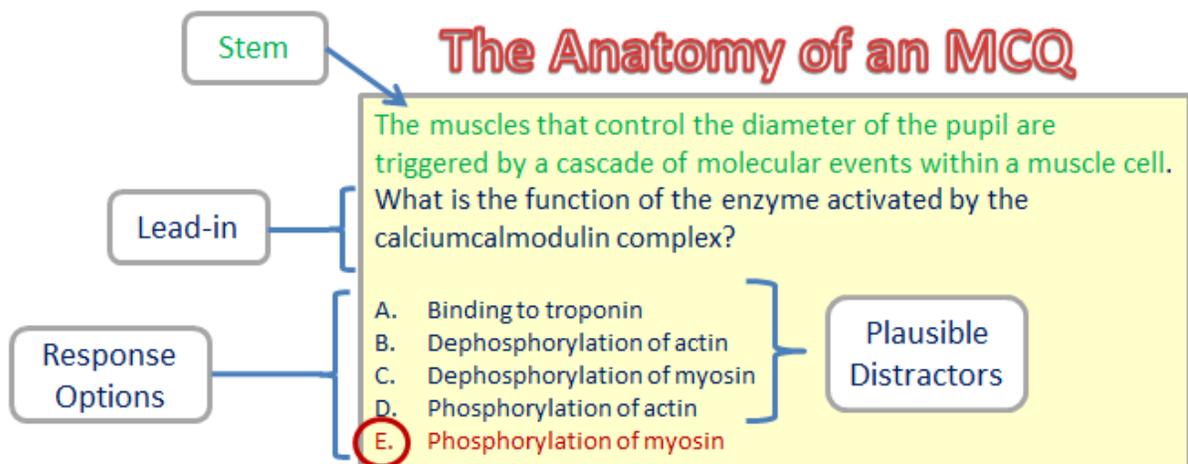
Good Multiple Choice Questions (MCQs) should:

1. Test important course material
2. Be applicable to the session objectives
3. Be supported by data from your lectures, textbooks, handouts or references

Each test question is referred to as an item.

| EACH ITEM SHOULD | AVOID |
|---|---|
| 1. Focus on ONE important concept; a single essential or important issue/topic | 1. Verbatim text (words using exactly the same as reading/lecture thus requiring examinee to recall versus demonstrate understanding of the material) 2. Tricky, trivial or overly complex items |
| 2. Assess application of knowledge, not recall of an isolated fact | |
| 3. Be proofed by someone <i>other than the author</i> to assure that language is clear, at appropriate level for test takers, grammatically correct including punctuation, capitalization, typos eliminated; spelling checked | |
| 4. Follow the best practices as outlined below | |

An item consists of three parts: the STEM, a LEAD IN QUESTION and RESPONSE OPTIONS as outlined below.



STEM: Provides the essential information needed to deliver the context for the item. Often the information is presented as a patient vignette (e.g., patient is a 60 year old... who presents with...), an experimental vignette or other application oriented context (e.g., “a recent journal article reported that...”).

| THE STEM MUST | AVOID |
|---|---|
| 1. Be identified as testing one point; be focused and clear leading to only one possible answer | 1. Adding new facts/information not presented in the lead in 2. Nonfunctional wording that do not contribute to the choice 3. Imprecise terms like “seldom”, “rarely”, “occasionally”, sometimes”, “few” and “many” |
| 2. Contain the information needed to answer the question | |
| 3. Be worded positively | |
| 4. Include the central idea rather than in response options | |

LEAD-IN QUESTION: Directs the examinee’s attention to THE focus for the item (e.g., *the most appropriate management is...; or the most likely explanation is...; given this pedigree, what is the likelihood that the next child will have...*).

| THE LEAD-IN QUESTION MUST | AVOID |
|--|--|
| 1. Pose a direct, <u>clear</u> question (see if a colleague can answer the question by looking only at stem and lead-in; cover up the responses) | 1. Posing the question as “always” or “never” or “all” (unless actually the case) 2. Posing the question as all of the following are true “EXCEPT” or “NOT” 3. Window dressing (excessive verbiage); minimal amount of reading |
| 2. Be positively phrased | |
| 3. Flow to all response options grammatically | |

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RESPONSE OPTIONS/ALTERNATIVES: Presented as A/B/C/D/E response options, the examinee selects the ONE best/correct answer consistent with the USMLE single best option format. The “incorrect” response options are commonly referred to as distractors. Common misconceptions are a good source of plausible distractors.

| RESPONSE OPTIONS MUST/SHOULD | AVOID |
|---|---|
| 1. Include only ONE right answer; distractors must be incorrect or inferior to the correct answer (do not make too fine a distinction unless absolutely needed) | 1. Including double answers (x and y); vague (“rarely” “usually”) 2. Using one or two response options “A” for easier scoring; or a pattern (e.g., do not randomize which option is correct) 3. Giving clues to the right answer, e.g., grammar inconsistencies; “clang” associations: a word or phrase is included in the stem and in the correct answer; convergence: the correct answer includes the most elements from other response options |
| 2. Have similar response options (all diagnoses, all lab values) | |
| 3. Use distractors that are plausible and attractive | |
| 4. Maintain independence with no overlap | |
| 5. Use students’ typical errors/misconceptions to write the distractors | |
| 6. Be similar in length, grammar, construction, logically ordered (increasing lab values) | |

SOURCES:

NBME (2016): *Constructing Written Test Questions for the Basic and Clinical Sciences 3rd Edition*, [online].

http://www.mcw.edu/Medical-School-FileLibrary/DEPT-Medical-School/Teaching-Toolbox/IWWGoldBook_webversion01.30.2016.pdf

Downing SM, Yudkowsky R. (2009) *Assessment in Health Professions Education*. New York: Routledge.

Haladyna T.M. et al. (2002) A review of multiple-choice item-writing guidelines for classroom assessment, *Applied Measurement in Education* 2002, (15), p.309–344.