

Writing (Good) Multiple Choice Questions (MCQ's)

(Review : Basic concepts in writing good MCQs)

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Outline

I Multiple Choice Questions (MCQs)

A. MCQ Format

B. Terminology Used in MCQ's

C. Criteria for writing "good" test items

1. Important

2. Clear

3. No Tricks

4. No Clues

} "Take Home Messages"

II. Conclusions

A. Checklist for writing single-best answer MCQ's

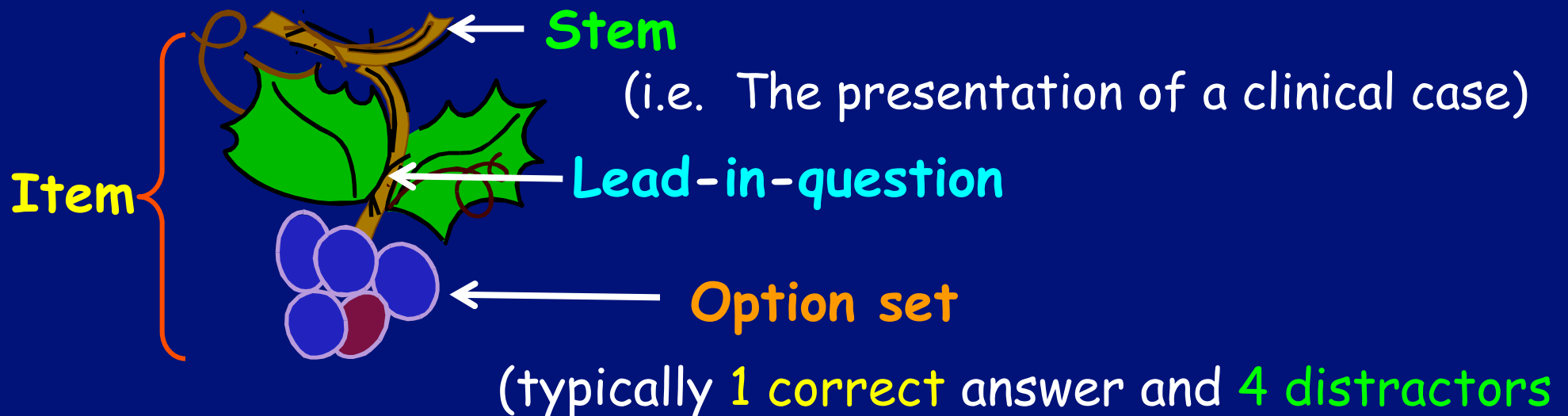
Writing **GOOD** Multiple Choice Questions (MCQ's)

In order to write "good" MCQ's
we need to:

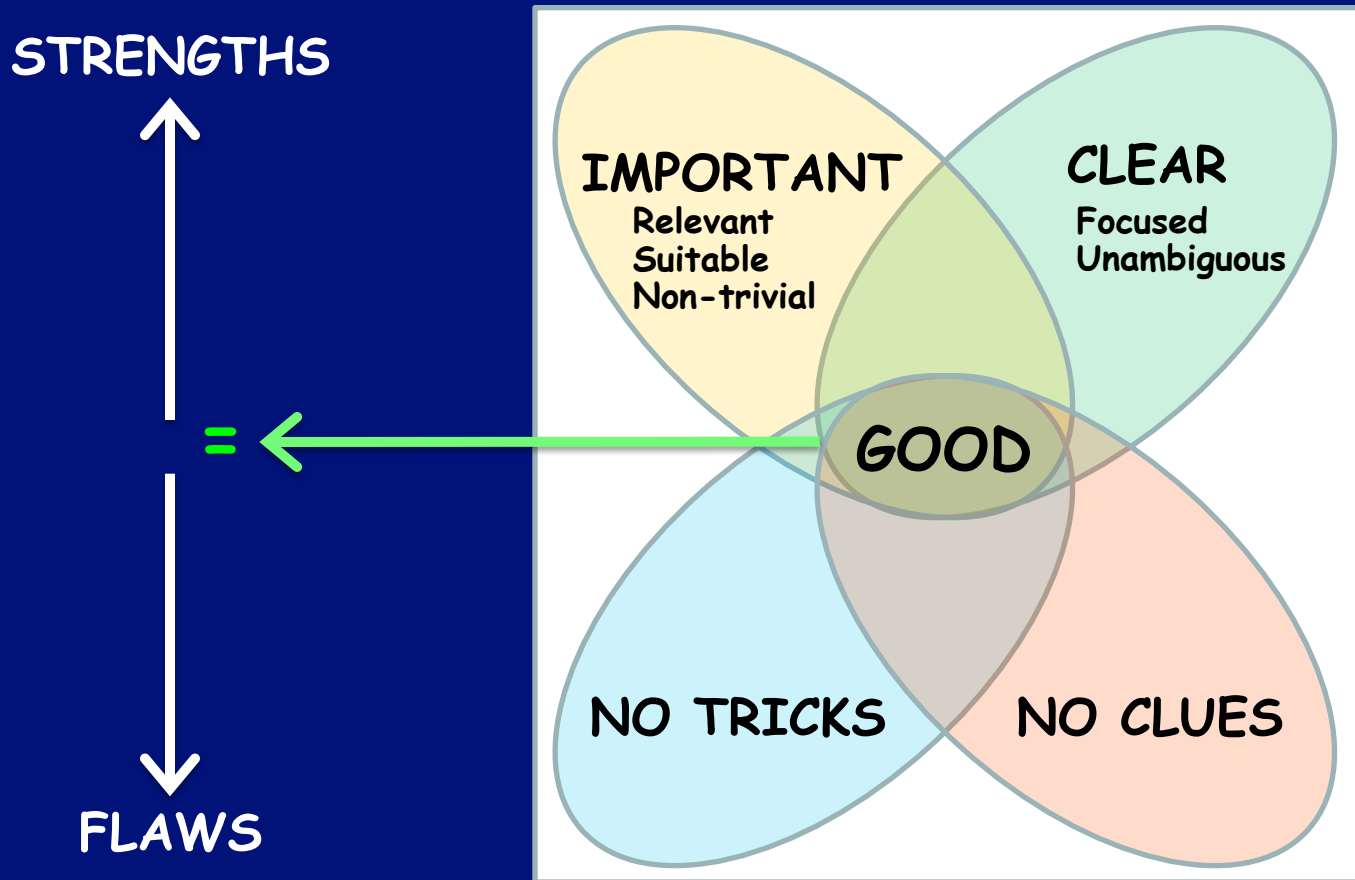
- ■ identify the various components that make up a MCQ

TERMINOLOGY USED IN MCQs

ITEM	The complete question with all its answers
STEM	Everything that comes before the question
LEAD-IN-QUESTION	The specific question
OPTION set	All of the answers, both correct and incorrect
DISTRACTORS	The incorrect answers
KEYED ANSWER	The single best answers indicated as correct



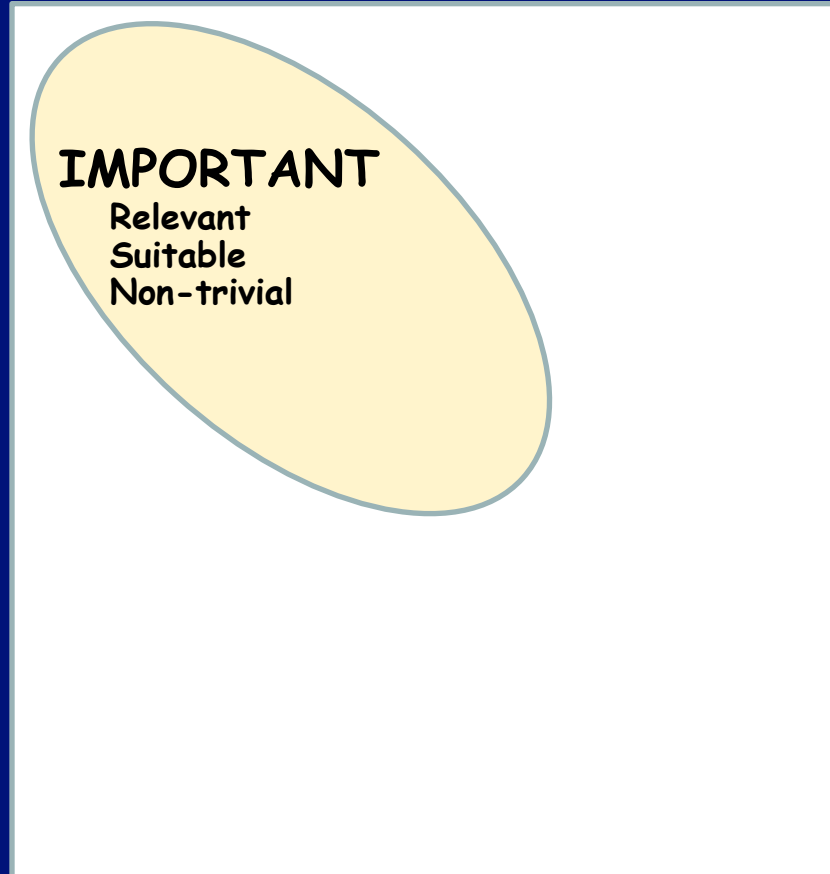
4 Criteria for Good Test Items (MCQ's)



4 Criteria for Good Test Items (MCQ's)

IMPORTANT

Provides examinee with a realistic (clinical) situation in which knowledge and/or judgment must be applied



Take Home Messages

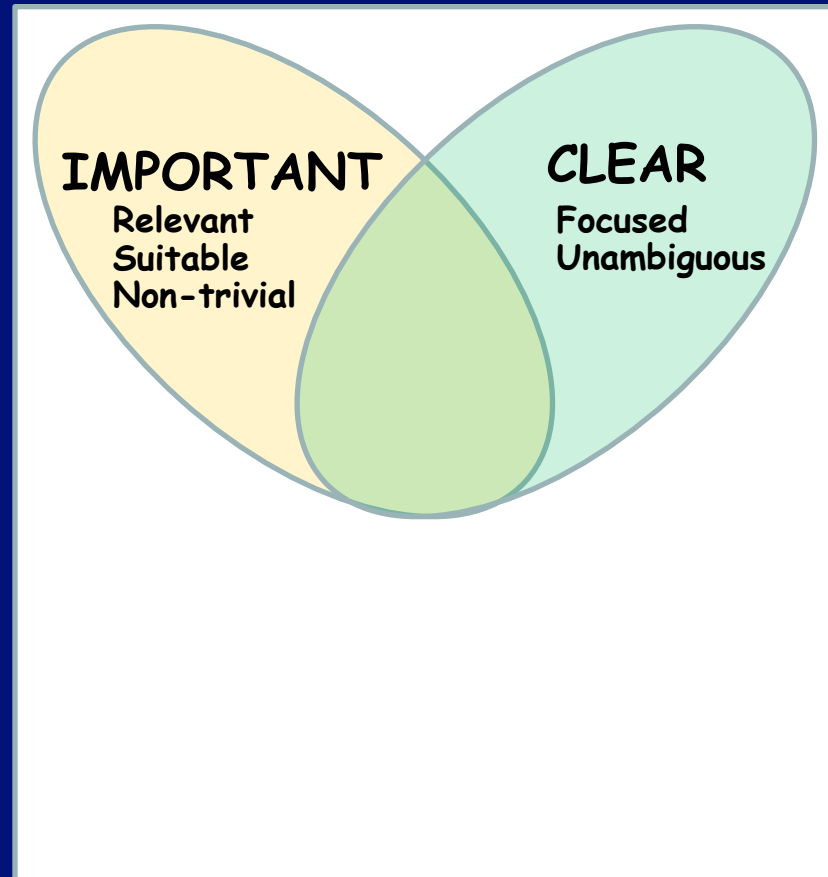
Important

- 1 The three components of a single - best answer multiple choice question are:
 - Stem
 - Lead - in
 - Option set
- 2 Write items only on important concepts
(*avoid trivia - avoid superfluous information*)
- 3 Consistent use of task templates promotes consistent phrasing of stems and lead-in questions

4 Criteria for Good Test Items (MCQ's)

CLEAR

Easy to understand
and interpret in the
same manner by all
examinees



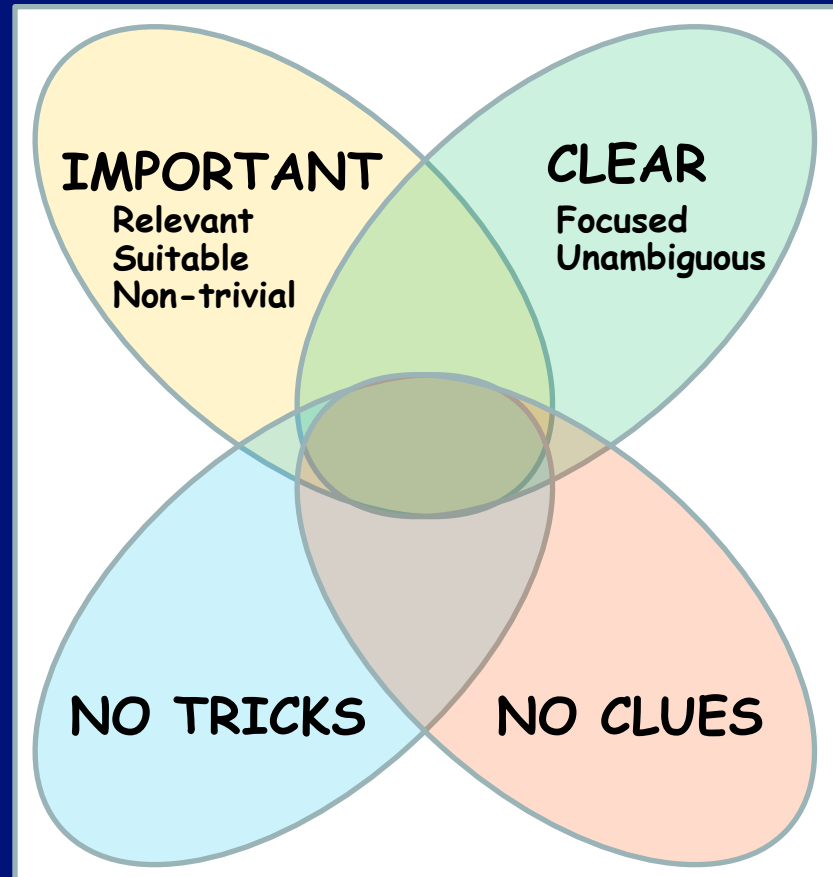
Take Home Messages

Clear

Stem & Responses

- 1 The "**stem**" presents the stimulus and should be written in the form of a vignette that describes a specific clinical scenario
- 2 The "**lead-in**" should be focused to ask a specific question that the examinee can answer without seeing the options
- 3 Include most of the information in the stem, **NOT** in lengthy distractors
(responses should rarely exceed one line)
- 4 The "**option set**" should include homogeneous answers (**correct and incorrect**) that can be rank-ordered (**from most to least correct**) on a single dimension

Criteria for Good Test Items (MCQ's)



NO TRICKS

Avoid tricks that may cause examinees to select **incorrect** responses

NO CLUES

Avoid responses that may help unknowledgeable, but test-wise examinees to select the **correct** answer

Criteria for Good Test Items (MCQ's)

There are two major types of **technical flaws** that are commonly introduced by question writers:

Flaws related to **irrelevant difficulty**

Avoid things that may cause examinees to select an **incorrect** response

No Tricks

Flaws related to examinees' **testwiseness**

Avoid responses that may help examinees select the **correct** answer

No Clues

Take Home Messages

No Tricks

Avoid tricks that may cause examinees to select incorrect response

- 1 Write the **lead-in** as a complete sentence ending with a question mark
- 2 The **lead-in** should be focused to ask a specific question that the examinee can answer **without seeing the options**
- 3 Include most of the information in the stem, **NOT** in lengthy distractors
(*responses should rarely exceed one line*)

Take Home Messages

No Clues

Avoid responses that may help examinees to select the **correct** answer

1 Grammatical clues

One or more distractors does not follow grammatically the structure of the "stem"

2 Logical clues

One of the subgroups of the options is exhaustively complete

3 Absolute terms

The finding of terms such as "always" or "never" in some options

4 Long correct answer

The correct answer is longer, more specific and more complete than the others

5 Repetition of words

A word or phrase is included in the "stem" and in the right answer

6 Convergence strategy

The correct answer includes the majority of the elements which are found in the other options

4 Criteria for Good Test Items (MCQ's)

IMPORTANT

Provides examinee with a realistic (clinical) situation in which knowledge and/or judgment must be applied

NO TRICKS

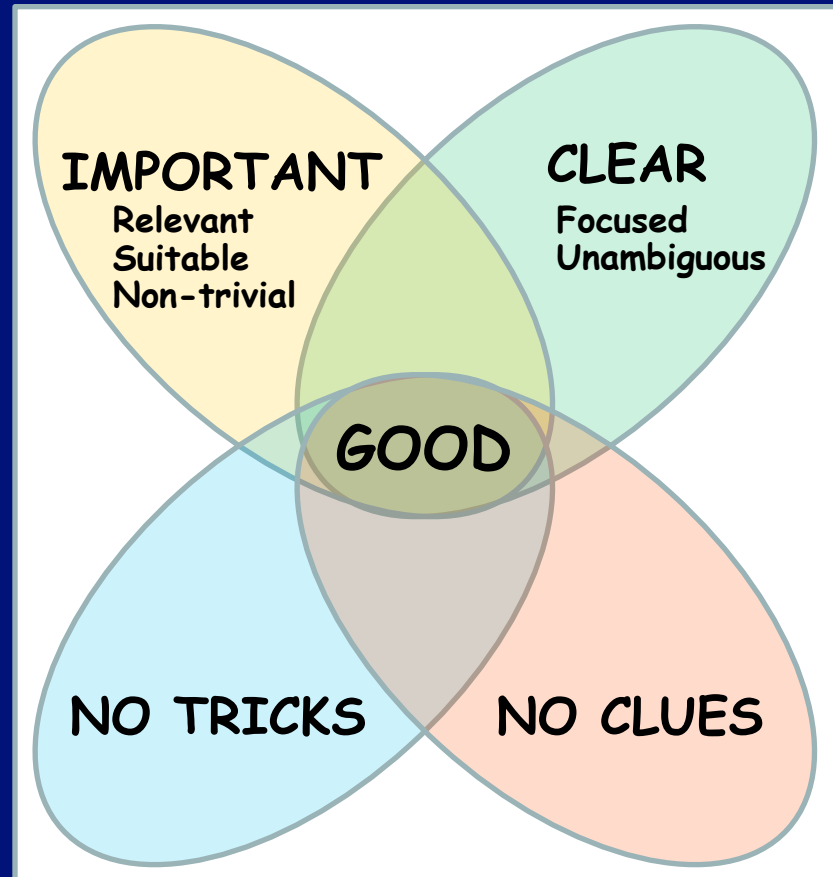
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CLEAR

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NO CLUES

Avoid responses that may help unknowledgeable, but test-wise examinees to select the **correct** answer



Checklist for Writing Single-Best Answer MCQ's

(modified from NBME-U)

- Item**
- Has a single-best answer format been used ?
 - Does it satisfy the "cover test" rule ?
 - Does it test application of knowledge rather than recall of isolated facts ?
 - Is it appropriately "balanced" (most of reading in stem & relatively short options)?
- Stem**
- Is the stem structured as a vignette, describing a specific situation ?
- Lead-in**
- Is it phrased positively rather than negatively ?
 - Does the phrasing avoid making the vignette irrelevant ?
 - Is it focused so that it poses a clear question to be solved ?
 - Is it structured as a complete sentence ending with a question mark ?
- Options**
- Are they homogeneous in content and phrasing ?
 - Are they similar in length and parallel in structure ?
 - Does each follow the lead-in both grammatically and logically ?
 - Can they be rank-ordered on a single dimension (from most to least correct) ?
 - Does the correct answer avoid repeating words used in the stem ("clang" clue) ?
 - Are distractors phrased to avoid repetition that clues correct answer (convergence)?
 - Has the option-set been constructed to avoid "none of the above" "all of the above" ?
 - Does each avoid the use of absolute terms (e.g. "always", "never") ?
 - Does each avoid the use of vague terms (e.g. "rarely", "usually") ?

“Examinations are formidable even to the best prepared,
for the **greatest fool**
may ask more than the **wisest man** can answer”

Charles Caleb Colton (1780-1832)