Whole Student Learning Series
A Guide to Testing Smart on Computer-Based Multiple Choice Exams

This guide provides basic tips and strategies for improving performance on multiple-choice exams. Topics: knowing the rules, time management, minimizing silly errors, over-thinking, second-guessing, changing answers, guessing strategies, Bloom’s taxonomy, test anxiety, positive-thinking, and sleep.

A basic 10-step test-taking strategy
1. Know the rules and follow instructions.
2. Read each question carefully and thoroughly. Don’t rush and assume you “get it” before you read the whole thing; you could miss a key word or important detail.
3. For particularly long questions, first read the last sentence of the stem (i.e., the actual question) so you know where the question is going and can more efficiently evaluate the information provided.
4. Try to predict the correct answer before looking at the options.
5. Match your predicted answer to the options provided.
6. If your response is there, read each of the other options before making your final selection to make sure there isn’t a better response, then mark your answer and move to the next question.
7. If your response is not there, re-read the question and proceed to ruling-out incorrect options (distractors).
8. If you’re stuck, re-read the question; don’t just keep reading the options. The correct answer follows from the information in the question stem, so always go back to the question.
9. If you’re still stuck, take your best guess, mark the question, and move on.
10. Double-check your answer selections.

Rules of engagement
Understanding the rules to which you will be held accountable is an underappreciated aspect of testing smart. When it comes to rules, there’s no such thing as “blissful ignorance.” Don’t risk your grade and your professional reputation: be sure to review and understand the MSUCOM Computer-Based Testing Policy.

As time goes by
Time management is an important test-taking skill. It’s just as bad to rush through an exam and leave early, without checking your work, as it is to get bogged down by a few very difficult questions and miss out on easier points because you run out of time! Having a time management plan that keeps you moving at a reasonable pace throughout the exam can keep you from panicking and prevent you from wasting time and making silly mistakes. Plan your time usage strategy before the exam so that you can pace yourself appropriately during the exam. Do some arithmetic to help you set a maximum amount of time to spend on tough questions before you make your best guess and move on.

Example: Your exam is 60 questions and 80 minutes long.
   1. Subtract ~5 minutes from the total exam time for settling in and receiving instructions.
   2. Subtract ~5 seconds per question from the total exam time for double-checking your work & making sure you’ve correctly selected the option you intended.
   3. Do the math. For this example: 80 − 5 − 5 = 70 minutes to take the exam, a bit more than one minute per question. Most questions will take less time. In this scenario, you would want to move on after no more than 1.5 minutes.

With Computer-Based Tests (CBT), you are able to mark questions to return to—take advantage of this feature. Statistically speaking, you’re more likely to get difficult questions wrong, so don’t spend too much time on them. If you can eliminate some options, do so, then guess, mark the question to come back to later, and move on. If you really get stuck and feel your anxiety rising and confidence tanking, then skim and skip questions until you come to one you can answer. Answering “easy” questions first (1) maximizes the amount of time you’ll have for difficult Qs, (2) increases your odds of getting all the “easy” points you can, (3) builds your confidence so that you can tackle the more difficult questions, and (4) could provide clues to the more difficult questions.

To not err
To minimize the type of errors that make you want to kick yourself later:
   ➢ Listen to and follow instructions.
   ➢ Make sure you know how many questions there are, so you don’t accidentally miss some.
   ➢ Check and double-check your responses to eliminate selection errors and other “silly” mistakes.
   ➢ Use your scratch paper to jot down key words, write notes, and draw diagrams. Everyone’s ability to think through a question is limited by short-term working memory capacity (STM holds about 7-10 items for ~30-60 seconds). The more information you have to sort through while figuring out the correct answer, the more likely you will forget something or make a mistake, so write things down as they come to you. For example, draw a simple sketch of the brachial plexus or jot down a helpful mnemonic.
   ➢ Be on the alert for words that “shift” your thought process: but, although, however, on the other hand, while, in spite of, despite, except, etc. These words can make the difference between a right and wrong answer.
   ➢ Don’t fall into the trap of thinking you “recognize” a practice question you’ve seen before. Professors often write new exam questions by changing just a word or two in a practice question, which creates an entirely different question! They’re not trying to trick you; modifying old questions is a very common technique for generating new questions.

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“Just the facts ma’am”
Stay focused on the information presented in the question. Though you may be required to make inferences / extrapolate, you should not have to “read into” the question to discover a hidden meaning or perform mental gymnastics to arrive at the correct answer.

- Select the best option for the context of the question. In other words, don’t read stuff into a question that’s not there (often described as “over-thinking”), a common cause of wrong answer selection among people who “know” the material. If you have to use your imagination to come up with a scenario that makes an option correct, it’s probably not the correct answer—re-read the question. Remember, your selection must answer the question posed, not the one you’ve created in your head.
  - Don’t be fooled by options that seem correct because they are simply true statements—these options might be correct answers to a question, but not the question. Your selection must answer the question, so once you’ve made your choice, re-read the question to make sure you’ve answered it!
  - A factually correct option may not be the right / correct answer to the question. In fact, there may be several options that are factually correct. The right / correct answer is the one that best answers the question. It’s often about context not just the facts, so read the question carefully. Once you’ve selected your answer, continue to read the options, benchmarking them against your first answer selection, and evaluating them within the context of the question stem. This isn’t second-guessing, it’s simply making sure you haven’t been too hasty and overlooked something.
- Don’t allow your emotions to dictate your answer. People with intuitive and feeling personality types (NFs; take the Jung Typology Test1) may be influenced by emotions and value judgments when answering questions2. Keep to the facts of the question, and remember that the best possible option may not be one of the choices you’re given. Just because you can imagine a better answer does not invalidate the question. Get over it!
- Don’t assume the test-writer is trying to trick you. So-called “trick” questions are usually either poorly written (it happens; nobody’s perfect) or difficult. A challenging question is not the same thing as a tricky question—it just means you haven’t quite reached the depth of understanding you need to easily answer the question. It is totally legitimate and fair to include questions that differentiate among students’ level of knowledge and understanding of the material. By assuming the test-writer is out to get you, you’re setting yourself up for “over-thinking” the question and jeopardizing your exam performance. Keep in mind, however, that while the question stem is not meant to trick you, the answer options will most likely include distractors that represent “common” mistakes / misunderstandings—that’s just good test-writing!
  - Poorly written or ambiguous questions will usually have “bad statistics” and may be re-graded to accept alternate answers. Don’t let them throw you off your game during the exam.
- Questions that appear to be testing your ability to memorize nit-picky details are usually testing your understanding of or ability to apply important concepts. Look for the general principle underlying the specifics.

Um, can I get a second opinion?
Second-guessing makes you your own worst enemy and is often a result of low self-confidence (or over-thinking the question or assuming the test-writer is trying to trick you or some combination of factors). Conquer second-guessing by having a sound test-taking strategy and by over-preparing.

- Sometimes second-guessers say they were “over-prepared” or “knew too much.” In reality, it probably means they had a superficial understanding of the topic (breadth as opposed to depth) or they read things into the question that were not there (made assumptions about conditions or context that weren’t presented in the question). Exams test your knowledge and understanding of a subject. Bottom line: when you know the material well, you will be more confident of your answer selection, and less likely to second-guess yourself.
- Many people talk themselves out of a correct answer when confronted by an option with which they are less familiar. For example, imagine you think option B is the correct answer, but you realize that you don’t remember exactly what option D is, so, you select D, not B. The faulty thought process goes something like this: I can’t remember all the details about option D, so I can’t rule it out, so it might be the right answer. Bottom line: select your response based on what you do know, not on what you don’t know.

“B” or not “B”: is that the answer?
Many of you have heard the refrain, “never change your first answer—go with your ‘gut’!” The idea is that your first impression is usually correct; however, this notion is not borne out by research. On the contrary, people are more likely to change a wrong answer to a right answer, or a wrong answer to another wrong answer, than a right answer to a wrong answer. Nevertheless, it is still not good strategy to randomly change your answers based on lack of self-confidence or second-guessing. There are three good reasons to change your answer:
1. You realize you misread the question stem or options the first time through, and upon re-reading, you are able to identify a better option, or
2. You come across information later in the exam that points you to a better option, or
3. You recall specific information that points you to a better option.
Guessing games
If there are five options, you have a 20% chance of guessing correctly, right? Not necessarily, that’s only if your guessing strategy is purely random. Making a truly random choice is hard for people to do—we have a lot of subconscious biases that make it possible to guess wrong on every question! One strategy is to always select the first choice of those remaining (after you’ve eliminated obvious wrong answers). If you can’t eliminate anything, select ‘A’. If you’ve eliminated ‘A’, select ‘B’ and so on. But, that doesn’t mean you should only make random guesses when you’re stumped. You can significantly improve your odds of guessing correctly by using critical reasoning to eliminate options. When eliminating options; however, the trick is to NOT eliminate the correct option—once you’ve done that, your chance of correctly answering the question is 0%.

Anyone up for a game of clue?
Content clues: taking advantage of information provided in the exam.
Information or memory retrieval cues may be found in other questions, which is one reason why it can be beneficial to quickly skim through the exam before diving into your first question or to move on from a difficult question you are struggling to answer.

Idiosyncratic clues: taking advantage of the test-maker.
Disclaimer: If you know the correct answer, don’t let these things dissuade you from selecting it. “Idiosyncratic clues” can be helpful, but only if you have to guess.
- Avoid options with absolutes such as “always” and “never”—they tend to be wrong.
- Long answers that contain more information are often correct.
- Grammatical agreement between the question stem and an option can sometimes give away the correct answer.
- If two of the answers are opposites, one of them is likely correct.
- If two of the options are indistinguishable, neither one of them is likely correct.

A Bloom by any other name
Understanding a little about test construction and levels of knowledge can help—perhaps not during the exam, but certainly in preparation for it. It’s useful to know what types of questions or what level of understanding will be required of you. Bloom’s taxonomy is a way of ranking the level of knowledge being tested. Six levels are described (levels 3 and up represent “higher-order thinking”):
1) Knowledge – tests recall of facts, but does not require or demonstrate understanding.
2) Comprehension – tests understanding of meaning and the ability to associate, generalize, and predict.
3) Application – tests ability to use or apply information in a different context from how it was presented, and tests the ability to problem solve according to established rules and principles (e.g., perform calculations using formulae).
4) Analysis – tests ability to break down information into its constituent parts to see how it’s organized, and demonstrates an ability to differentiate, compare and contrast.
5) Synthesis – tests ability to create new information and ideas from old ones, make connections, generate hypotheses and design experiments.
6) Evaluation – tests ability to make judgments about the value of theories and ideas, weigh information appropriately and use reason and logic to determine if an argument is good or bad.

Practice questions and quizzes tend to emphasize levels 1 and 2 (knowledge and comprehension), while unit exams and national boards (COMLEX and USMLE) ask mostly higher-order questions. This is important to keep in mind as you study. Higher-order questions are usually perceived as more difficult, which is one reason why students tend to do better on practice questions than on course/unit exams.

High anxiety!
Test anxiety can be profoundly debilitating; however, what may seem like test anxiety could simply be a well-founded lack of confidence due to under-preparation (e.g., you know you didn’t study enough or don’t know the material well enough). Some anxiety can be motivating (e.g., a fear of failure can make you study harder); some people even enjoy the “adrenaline rush” they feel before an exam. If you think you genuinely suffer from debilitating test anxiety, you will need professional counseling to overcome it; it is a psychological issue requiring diagnosis and treatment (e.g., therapy and/or medication). The most successful treatments for anxiety are typically some combination of cognitive behavioral therapy, to control negative thoughts, and desensitization therapy. Meditation and relaxation techniques can also help minimize the impact of test anxiety.

Indicators of test anxiety include:
✓ Past history of test anxiety,
✓ Negative self-image,
✓ Anxiety and worry that creeps into other aspects of your life,
✓ Being bombarded by negative thoughts during the exam (“I’m so stupid,” “I’ll never be a doctor,” “I’m going to fail”),
✓ Comparing one’s performance after the exam to that of classmates (asking friends what they put for question X),
✓ Inability to sleep the night before the exam,
✓ Physiological symptoms of a general stress response before or during the exam (sweaty, shaky, difficulty breathing, rapid heart rate, nausea), or
✓ “Racing thoughts” or “blanking out” during the exam.
A basic 3-step strategy for controlling test anxiety is:

1. Calm down: Remind yourself it’s not the end of the world and that panic is unproductive. Your body and brain are treating the situation as though it’s life-threatening, but it isn’t.
2. Take several deep breaths: Controlling your breathing can help reduce the physiological symptoms of anxiety.
3. Push away "worry" thoughts and replace them with positive thoughts: Negative thoughts take time away from the cognitive task-at-hand. This greatly diminishes your mental processing efficiency, and tends to have a larger detrimental effect on exam performance than the more obvious physiological symptoms.

The little doctor that could: “I think I can, I think I can, I think I can”
Don’t underestimate the power of positive thinking! Develop or adopt an affirming positive mantra that you regularly repeat, such as, “I have studied all I can, I know the material well, and there’s no question I cannot answer.”

To sleep, perchance?
What sucks knowledge out of your head faster than you can put it in during an all night cram session? You guessed it: sleep deprivation! Adequate sleep for most people is 7-8 hours per night. Very few people—probably those with a specific gene—can get by with less. You’re probably not one of these people! Sleep deprivation, even for just one night, impairs important cognitive abilities like judgment, reasoning, memory recall and focus. It can increase the number of silly mistakes you make, as well as, severely impair your ability to recall information you’ve learned, even if you know it pretty well. Studies comparing driving while under the influence of alcohol to driving while sleep deprived have shown that sleep deprived individuals (less than 6 hours) perform worse than folks with a blood alcohol level of 0.05! So, say nighty-night to your books at a reasonable hour, spritz your pillowcase with the scent of lavender, count sheep, and let the Zzzzz's carry you away.

References
2. Lawrence, G. People Types and Tiger Stripes. Center for Applications of Psychological Type, Inc., 1979.