Before Beginning Your Review

- Completing a self-assessment
  - Prior to the date you intend to begin your studies, take stock of your initial preparedness. Using the content outline for this exam, create a quick chart rating your fund of knowledge and experience with each topic.
  - As you know, the topics on this exam tap into a range of learning approaches (e.g., visual and quantitative learning, simultaneous vs. sequential reasoning, memorization vs. conceptual thinking, etc.). So, in addition to rating your readiness by topic, a good self-assessment also includes a brief evaluation of your preferences, strengths, and weaknesses as a learner. (More on this issue later.)

**TIP:** If you will not be attending an in-person review course that includes a self-assessment, use a portion of the items in your question bank to create your own pretest.

- Building a study map
  - A study map ensures that all topics are addressed well and that appropriate review strategies are employed for each one. A study map also makes life easier, as the decisions about what to study in a given week are front loaded.
  - A well-constructed study map begins with time finding. Short bursts of study time can appear spontaneously during the day; when they do, be prepared to use them (see “Deciding where to study” below. But more extensive periods of review time are needed, too, and finding them usually requires some detective work.
  - In addition to the start date for your study and your anticipated exam date, an effective map also includes the following elements:
    - Specific dates for the review of each topic
    - Dates for catch-up study sessions
      - Catch-up hours are earmarked for study but have no assigned topic until close to the study-session dates.
      - Catch-up hours make room for study when other work or life commitments have interfered with your map. They also provide opportunities for additional study of topics that prove to be more challenging than expected.
      - Candidates often significantly underestimate the number of catch-up study hours needed, so it is advisable to include many such sessions in the study map right from the beginning.
    - Dates for loop-back sessions
  - Loop-backs are brief and lightweight study periods designed to reconnect with material that you examined in more detail 1–2 weeks earlier. The goal of these study periods is to improve the student’s ability to retrieve information across time and to reduce anxiety about retaining information that has already been studied.
  - Creating a map with the features described here requires about 1.5–2 hours.

**TIP:** Given the density and volume of material to review, it is easy to build ambitious study maps that are impossible to maintain. A good plan is one that takes into account the practical requirements of your other responsibilities (i.e., make a map that is livable).

**TIP:** If you have a disability that qualifies for testing accommodations under the Americans with Disabilities Amendments Act and you intend to seek an accommodation, your map should include the time needed to complete the request process.

- Assembling your study kit
  - Just as we are more likely to go to the fitness center for a workout if we pack a gym bag the night before, we make better use of our study time if we collect and organize a set of review material in advance.
  - To prevent a scattered approach to study, it often works best to think of your study materials in three layers:
    - The first is your set of central resources, like this text, that can provide the overall foundation for your review.
    - The second layer might include several resources, perhaps ones you already own, that you turn to for short, detailed study of specific subtopics that need more attention. These first two layers should provide most of the resources needed for your study.
    - The third layer of materials is only for limited occasions when you encounter a persistently difficult sub-topic that needs to be looked at from another angle. It is likely you already possess much of what is needed for this third layer as well.
  - For your study kit, also collect other materials including a notebook or portfolio, paper flashcards and/or a flashcard application, markers, etc. In addition, if you will not have easy access to a white board during your study sessions, consider purchasing a large sketchpad.

- Deciding where to study
  - When you find yourself with a few moments prior to a meeting or while waiting in a queue, make use of this time by having quick-review materials close at hand (e.g., review notes on your phone or a deck of flashcards
in your pocket). In these cases, deciding where to study is not a priority; rather, the goal is to benefit from these slivers of time when and wherever they appear. A fair bit of learning is additive, meaning that we take on about a flashcard’s worth of information at a time. So, use these short study interludes during your day, even if your location is not ideal.

However, planning for longer sessions should include decisions about study locations. It may be simpler to study in a single accessible location, but this can be a suboptimal approach for board review. As we study, elements of our environment, such as the type of lighting or the color of the walls, can become embedded with the target information. Later on, when those environmental cues are no longer present, retrieval can then be more difficult than anticipated. Changing study locations from time-to-time helps build the geographic independence that allows you to remember concepts and details, regardless of where you are.

**TIP:** Sometimes the only plausible place to work on your board review is in your own home. When this is the case, set up a place to study that is dedicated solely for this purpose.

**TIP:** As you will not have control over the environmental conditions of your actual test location, consider working at times in a location that includes a slightly uncomfortable feature. For example, study for a few sessions in a chilly room, if air conditioning annoys you; in a room with fluorescent bulbs, if that type of lighting is irksome; and so on. This practice will help you plan ahead (e.g., by dressing in layers) or at least will build your capacity to cope with any irritating conditions in the testing room.

### The Review Itself

- For each group of concepts and facts, make sure that your study approaches include all three stages of the learning cycle: input, quizzing, and testing steps.
- The **input step** employs reading, listening, and watching study materials, such as texts and review guides, podcasts, lectures, and videos.
- While you are engaged with these input activities, you are likely to be jotting something down. It may feel as if writing and drawing should cement your learning, but the making of study tools such as flashcards, charts, diagrams, and concept maps—while all good options—largely still fits within this first step of the learning cycle. It is true that creating a study tool requires selectivity about what you write down and the use of your own words or images, but just creating study tools is typically not enough. It is likely that your retention of the materials written in these study tools will be less than expected.
- So, within each session, stop periodically to examine your retention of the material you have taken in during the input step. The essential feature of this **quizzing step** is asking yourself questions and then immediately checking the accuracy of your responses. Easy ways to complete this step include reviewing any flashcards you have just created and generating questions from the rows and columns of the charts you have made.
- During this stage of the learning cycle, special attention should be paid to the power of drawing. A great deal of the material you need to review is visual and sequential in nature, so quickly made illustrations, flowcharts, and concept maps are effective ways to rehearse this material.
- Do not spend time making artistically sophisticated illustrations and charts, however. The goal is to sketch out your ideas quickly from memory and then check your work.
- During the **testing step**, set up conditions that simulate some elements of the actual exam. While completing practice questions, add time limits and refrain from stopping in-between questions to check your answers. More information about this step can be found in the “Practice question review” section, later.

**TIP:** Given the amount of material you have to review, it can seem more productive to complete extensive swaths of input activities before turning to the quizzing or testing steps of the learning cycle. Resist the impulse to just remain in the input stage by remembering how productivity is calculated. Getting the optimal amount of output for the amount of input you invest is your goal; this typically requires frequent toggling between the three stages of the learning cycle.

**TIP:** At intervals, add a self-check about the learning cycle to your study map. As time goes on, it is easy for the balance among these steps to become skewed. A common issue, for instance, is to lapse into an approach dominated by one of the stages of the learning cycle (e.g., just reading or just doing practice questions). While it is not necessary to allocate an exact one-third of study time to each of the stages, it works best if some attention is paid to all three for each set of concepts and facts.

**Pacing yourself**

- As mentioned, brief units of study time can be valuable, but some longer study sessions are also essential for adequate preparation. However, at times it can be difficult to maintain full engagement with your review materials during these more extensive sessions. Appropriate pacing helps to offset exhaustion and distraction.

- A recommended rhythm for longer sessions includes studying in about 50-minute periods followed by 10-minute breaks. To help you stay on track, use a timer on your phone for both the learning and the break portions of your study.

- The nature of the mini-breaks has more influence than you might initially think. “Negative” breaks can lead to reduced concentration in the next cycle, while “positive” ones work in your favor.

- Negative breaks are those that introduce other agendas, even those that are entertaining. So, avoid using the 10-minute breaks to check messages, make calls, watch videos, surf the Internet, watch television, and the like. Nobody concludes such breaks feeling energized and ready to take on the next learning challenge. (It may be that your work and family obligations require you to take messages, but the time devoted to these duties should not be counted as mini-breaks.) Positive mini-breaks are those that allow you to recenter for a few minutes. A light snack, a few minutes of
stretches, a quick walk around the block, listening to a favorite song—all of these can help you get ready for the next 50 minutes of study, and they neatly fit within the recommended 10-minute time frame.

**TIP:** Because you are so pressed for time in general, you may have developed an approach to work that propels you through long sessions without stopping. If so, keep in mind that this work habit leads to diminishing returns during board review sessions. Let yourself take those short breaks so your learning can become consolidated.

**TIP:** The 50:10-minute study cycle dovetails well with the steps of the learning cycle described earlier. For instance, you might designate the first 50 minutes for input practice by reading a text, taking a short break next, and then going on to a 50-minute period of quizzing yourself about the material you just read. Another helpful pattern is to devote your first session of the day to timed questions about the material studied earlier that week. Subsequent 50-minute sessions can include the input, quizzing, and testing pattern with new material.

### Reviewing Practice Questions

This section details how to make the best use of the testing stage of the learning cycle. To efficiently process a group of timed questions that you have already completed, try labeling each of your answers as follows:

**A. A correct answer that was easy for you to get right.** Some review of the explanatory material provided for the wrong answers can be helpful, but keep this part of your review light so you can devote sufficient time to the following answer categories.

**B. A correct answer that required more effort for to achieve.** To clarify, this category is for questions that made you hesitate because you had difficulty recalling the required information. You may have been able to narrow down the answers to two choices, and, in this case, you selected the correct one. The most efficient way to make use of such items for further review is to answer this question:

*What would I have known if I had been able to answer this question easily?*

This question helps you zero in on the precise information or steps in reasoning that you need to practice.

**C. A correct answer that you selected for the wrong reason or through a lucky guess.** Treat these like wrong answers as per D, E, and F below.

**D. An item you got wrong because you never knew the needed information.** For these questions, sometimes the explanations provided in the answer key are enough to master the subject at hand. However, some of the time, you need to read additional material. In these cases, it is smart to assign a value to the concept to be reviewed, and then set a timer accordingly. For instance, you may have missed a question that reveals a gap in your knowledge base that would take about 10 minutes to remediate, while another topic might require 20 minutes of work. Timing these extra reviews helps you return to your original task promptly. (If you uncover the need for extensive review of a topic, it is often a good idea to move this larger unit of study to one of the upcoming catch-up periods that you have scheduled on your study map.)

**E. An item that you got wrong because you partially knew the needed information.** This category is the flipside of (B), that is, you may have been able to make some headway toward the answer, but you were unable to pinpoint the correct choice. Again, the strategy here is to look for those small elements of information that would allow you to answer a question on this topic correctly in the future.

**F. An item that you got wrong because of a misconception about the topic.** This category differs from (D) and (E) above in that the learner believes something to be true, when in fact it is not. For instance, many young students believe that plants increase in mass by taking it up from the soil; while others think that seasonal changes in temperature result from an increase or decrease in Earth’s proximity to the sun. While you undoubtedly understand carbon fixation and the tilt of Earth’s axis, we all have errors in our overall base of knowledge. However diligent we may be, our own misconceptions can be difficult to spot. A clue that a misconception might be in play can be found when we answer items incorrectly, but the correct answers do not make sense, even after careful review. An efficient way to remedy misconceptions is to work collaboratively with a study partner. More on this next.

### More Advice

- **Studying with a colleague.**
  - While finding time to review board material with a colleague can be an issue, the payoff can be significant. In addition to rooting out misconceptions, these sessions can provide the chance for needed repetition and a motivational boost.
  - It is optimal during these sessions for the person who knows the least about a given subtopic to explain what he or she can, and then to allow the other to make additions and corrections.
  - Use Skype or other videoconferencing applications when in-person sessions are not practical.

- **Visiting the testing center**
  - If this will be your first time taking an exam at the testing center where you are registered, plan a visit to this location. This will allow you to gauge more accurately the time needed to get there, to check out parking options, and to appraise the location where the test will be taking place.

- **Attending to diet, sleep, and exercise**
  - Also essential is finding time for a reasonable level of self-care. Because reviewing for this exam adds to your workday, it is easy to let nutrition, rest, and exercise fall by the wayside. However, both the review process and the exam itself require stamina, so looking after your well-being is part of good preparation.
  - Self-care does not need to be perfect to be good. If you are not able to fit in an entire workout routine, for example, then a brisk walk can still be beneficial. Similarly, while long sessions of home cooking might not fit into your day, making better choices at the hospital cafeteria is probably doable.
The goal of the day before the test date is to set up conditions that optimize knowledge retrieval during the exam. So, do not use this day trying to force in one last set of facts or asking yourself to answer another set of practice questions. Instead, to the extent your work and family duties allow, make this a day for light activity and rest.

Thinking positively

As sports psychologists know, the way we visualize our future performance has an impact on how we ultimately do. So as the exam gets closer, try these positive images:

- Recalling a prior time when you did well on a challenging exam;
- Imagining a question on your upcoming board exam that you do not answer with full confidence, shaking it off, and continuing onto the next item;
- Picturing success with a complicated question;
- Visualizing yourself dispelling nervousness by using short relaxation strategies;
- Imagining yourself answering the last question on the exam knowing that you had acquitted yourself well overall;
- Picturing yourself walking out of the testing center knowing that this was a successful day.