

## Strategies for Grid-In Questions

The six questions on the grid-in section of the exam require that you enter a numerical answer into the machine-scored answer sheet. Note the following suggestions:

1. Use your calculator when necessary. But don't expect all grid-in questions to require the use of a calculator. Some do not.
2. Enter appropriate negative signs and operators. If your answer has a negative value, be sure to enter a negative sign. If the question requires that an answer be expressed as a fraction, be sure to enter the division operator ("/" as in "1/4").
3. Provide the correct level of accuracy. Grid-in questions will ask you to provide your answer with a specific level of accuracy. For example, answers may require that you calculate your answer to the nearest whole number, to the nearest tenth, or to the nearest hundredth. Because of rounding, some questions allow a range of correct answers. Depending on the type of question, a correct answer can vary by 1% to 5%, sometimes even more. In other cases, where rounding does not occur, only a single value is accepted. If the question asks for an answer expressed to the nearest whole number, that is usually a clue that the answer has only one accepted value.
4. Consult the equations and formulas pages. If you are initially baffled after reading a grid-in question, try consulting the provided equations and formulas pages to help you recall how to answer the question.
5. Write your answer in the provided space. Then carefully fill in the bubbles. This is both faster and more accurate than just filling in the bubbles.
6. There is more than one way to correctly fill in a grid-in answer. Some examples follow.

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## Strategies for Free-Response Questions

The free-response questions are provided in a separate booklet. During the 10-minute reading period, read the questions thoroughly, circling key words. Next, write a brief outline using key words to organize your thoughts. When the writing period starts, begin writing your answer on the answer sheets that are provided separately. If for some reason you don't write an outline, go back and reread the question halfway through writing your answer. Make sure that you're still answering the question. It's easy to get carried away, and by the end of your response, you might be answering a different question.

The two long free-response questions are each worth a maximum of 10 points. The maximum amount of points awarded for each of the six short free-response questions varies, but is usually 3 or 4 points.

Strategies for answering the free-response questions follow:

- 1. Don't approach the free-response section with apprehension.** Most students approach the free-response section of the exam with more anxiety than they have when approaching the multiple-choice section. However, in terms of the amount of detail in the knowledge required, the free-response section is easier. On these questions, *you* get to choose what to write. You can get an excellent score without writing every relevant piece of information. Besides, you don't have time to write an entire book on the subject. A general answer that addresses the question with a limited number of specifics will get a good score. Additional details may (or *may not*) improve your score, but the basic principles are the most important elements for a good score. In contrast, a multiple-choice question focuses on a very narrow and specific body of knowledge, which you'll either know or you won't. The question doesn't let you select from a range of correct information.
- 2. Keep your answers brief for the short free-response questions.** Short questions are typically worth only 3 or 4 points (as compared to 10 points for a long question). Some short questions will be very general and seem to be asking for a whole lot of information, as if it were a long question. If you get a short question like this, don't freak out because you think that it will take 20 minutes to write down everything you know. Instead, you only need to provide three or four pieces of information. Come back and add more if you have time. Other short questions will be more specific, asking for an explanation to a particular question.
- 3. Give specific information in your answer.** You need to give specific information for each free-response question. Don't be so general that you don't really say anything. Give more than just terminology with definitions. You need to use the terminology to explain biological processes. The combination of using the proper terminology and explaining processes will convince an AP exam reader that you understand the answer. Give some detail when you know it—names of processes, names of structures, names of molecules—and then tell how they're related. The exam reader is looking for specific information. If you say it, you get the points. You don't have to say everything, however, to get the maximum 10 points.
- 4. Answer each part of a free-response question separately.** The free-response questions, especially the long ones, ask several related questions in multiple parts. A single question, for example, might have two to four parts, each requesting specific information. You should answer each part of the question in a separate paragraph, which helps the exam reader recognize each part of your answer. Some questions are formally divided into parts, such as a, b, c, and d. Again, answer these questions separately, in paragraphs labeled a, b, c, and d.
- 5. Answer all required parts of a free-response question.** It is extremely important that you give a response for each part of the question. Don't overload the detail on one part at the expense of saying nothing in another part because you ran out of time. Each part of the question is apportioned a specific number of points. If you give abundant information in one part, and nothing in the remaining parts, you receive only the maximum number of points allotted to the part you completed. In a four-part question, that's often only 2 or 3 points. You won't get any extra points above the maximum 2 or 3, even if what you write is Nobel Prize-quality.
- 6. Don't answer more parts than required.** Some long free-response questions give you a choice of parts to answer or even choices within a single part. Choose the parts that you know the most about and answer only those parts. Do not answer extra parts. *There is no extra credit on this exam!* In general, an exam reader will not read beyond the required number of answers. In cases where the exam reader does read the extra parts, you may lose points if you contradict something you said correctly in an earlier required part.
- 7. Budget your time.** You have 90 minutes (including the reading period) to answer eight free-response questions. Allow 20 minutes for each of the two long questions (40 minutes total) and 6 minutes for each of the six short questions (36 minutes total). During the reading period, identify those questions you think you can answer the best and answer those questions first. However, just as it's most important to answer all parts of a question, it's best to respond to ALL of the free-response questions rather than to answer five or even six of them extremely well, with no responses on the remaining two or three. You'll probably know *something* about every question, so be sure you get that information written. If you are nearing the end of the 90-minute period and you still have several questions to answer, use that time to write something for each of the remaining questions. One point, especially on a short free-response question, is a lot better than zero.

8. **Don't worry if you make a factual error.** What if you write something that is incorrect? The AP exam readers look for correct information. They search for key words and phrases and award points when they find them. If you use the wrong word to describe a process, or identify a structure with the wrong name, no formal penalty is assessed. If you're going to get any points, however, you need to write correct information. Also, you'll lose points if you contradict something you said correctly earlier.
9. **Don't be overly concerned about grammar, spelling, punctuation, or penmanship.** The AP exam readers don't penalize for incorrect grammar, spelling, or punctuation or for poor penmanship. They are interested in *content*. However, if your grammar, spelling, or penmanship impairs your ability to communicate, then the exam readers cannot recognize the content, and your score will suffer.
10. **Don't write a standard essay.** Don't spend your time writing a standard essay with introduction, support paragraphs, and conclusion. Just dive right in to your outline and answer the question directly. On the other hand, your response cannot be an outline; it must have complete sentences and be written in paragraph form.
11. **Don't repeat the question in your answer.** Or do so only briefly. The exam reader knows the question.
12. **Improve your score by incorporating drawings.** Drawings and diagrams may sometimes add as much as 1 point to your free-response score. But the drawings must be explained in your response, and the drawings must be labeled with supporting information. If not, the AP exam reader will consider them doodles, and you will get no additional points.
13. **Pay attention to direction words.** A direction word is the first word in a free-response question that tells you how to answer the question. The direction word tells you what you need to say about the subject matter that follows. Here are the most common direction words found on the AP exam:
- *Discuss* means to consider or examine various aspects of a subject or problem.
  - *Describe* means to characterize or give an account in words.
  - *Define* means to give a precise meaning for a word or phrase.
  - *Explain* means to clarify or make understandable.
  - *Compare* means to discuss two or more items with an emphasis on their *similarities*.
  - *Contrast* means to discuss two or more items with an emphasis on their *differences*.
- Specialized direction words are used for the free-response and grid-in questions that evaluate your quantitative skills. These words include *design* (an experiment), *calculate* (a value), and *construct* and *label* (a graph). These words have specific meanings for laboratory analyses and are discussed in Chapter 17, "Review of Laboratory Investigations."

## Taking the Practice Exams

For each of the practice exams, a scoring template is provided for the multiple-choice questions. Each exam is followed by an answer key for the multiple-choice and grid-in questions, explanations for these questions, and scoring standards for the free-response questions (often called a rubric).

To get the full benefit of simulating a real AP exam, set aside at least 3 hours for each practice exam. Begin with the multiple-choice and grid-in section (Section I), and after 90 minutes, stop and move on to the free-response section (Section II). Spend 10 minutes outlining your answers to each free-response question, and then allow yourself 80 minutes to write out your full answers. By using the actual times that the real AP exam allows, you will learn whether the time you spend on each multiple-choice, grid-in, and free-response question is appropriate.

When you're done taking a practice exam, score your exam using the multiple-choice and grid-in answer key and the free-response scoring standards. Then go back and answer any multiple-choice questions that you were unable to complete in the allotted 90 minutes. When you are done, read all of the multiple-choice explanations, even those for questions you got right. The explanations are thorough and provide you with information and suggestions. Even if you know the answers, reading the provided explanations is good review.

Although you've heard it so many times, practice *will* improve your test performance (although it's unlikely to make you perfect). So be sure to complete both practice exams and review all of the answer explanations. Good luck.