

## **The Question Types**

1. The document based question (DBQ): The DBQ begins with an article to read. The article is usually a fictitious article from a newspaper, and is usually about half of a page long. The article may outline a particular environmental problem. You will then be asked to answer a set of questions that are related to the article. While the article is there to guide your thought, we would not recommend quoting the article in your answer. You are expected to come up with your own answers, and will not usually get points for answers that are taken directly from the reading.
2. The calculation question: There will most likely be one question that requires a great deal of calculation. Most of the points in this question will be awarded for correctly setting up the problems, and correctly answering them. If you are a math whiz, then this is your time to shine. If math freaks you out, do not skip this question. Check all of the parts of the question. Some of the parts may not be calculation based at all, and you may still be able to earn some points on the question. Sometimes you will be asked to draw a graph. If this is the case, then be sure to appropriately title the graph and label the axis. Do NOT “box in” your answer. No sig figs required, but you should extend your answer to at least one, preferably two decimal places.
3. The content questions: The other two questions generally require you to have some specific content knowledge. For example you may be asked to describe a process such as wastewater treatment. Further in the question you may also have to know some advantages and disadvantages of the wastewater treatment process, some alternatives to traditional wastewater, and maybe even describe a law that relates to wastewater treatment.

## Rules of the Free Response

First things first, **THER IS NO GUESSING PENALTY ON THE FREE RESPONSE!** The free response questions are graded with a rubric, which means that you will be awarded points based on your correct answers. Points are not deducted for incorrect answers. Because of this, you should attempt to answer every portion of the free response. Let's break down the free response!

You will have 90 minutes to answer the four free response questions, and you will not be allowed to use a calculator. Later, we will look at each type of question that is likely to show up on the free response portion. First, here are our top ten keys for success on the free response:

1. When you begin the test, quickly read all of the questions, and rank them in order of difficulty. **Begin working on the "easiest" question, and work your way toward the more difficult ones.** Since this is a timed test, you would rather spend your time working on the questions that you will be most likely be able to complete successfully. If you do run out of time, you would rather run out of time on the most difficult question.
2. **Answer the question in the order that it is given to you. If the question has parts A, B, C, D, and E, then your answer should also have parts A, B, C, D, and E. Go ahead and label each part of your answer and leave a space in between each one.** This will make it easier for the grader to read your paper, and award you with the points that you have earned. If your answer is written in one giant paragraph, it makes it much more difficult to grade.
3. Stay on task! While you are writing, ask yourself whether or not what you are writing is directly answering the question. If the answer is no, then you shouldn't be writing it. Stay away from flowery introductions, **and don't restate the question. ONLY ANSWER THE QUESTION.** Points are awarded for the correct answers that are found on the grading rubric. It only wastes time to write extra stuff.
4. Pay very close attention. This one is important. **You need to be specific in your answers.** For example, if a question asked you to **"describe an environmental impact of using fossil fuels for transportation"** you might answer that using fossil fuels generates air pollution. This would be a true statement, but it would not earn any points. You need to be more specific. **You should explain that burning fossil fuels generates CO<sub>2</sub> emissions, increasing greenhouse gasses, or that burning fossil fuels generates SO<sub>2</sub>, which can contribute to acid rain. Specific answer = points.**
5. From time to time, you will be asked to **draw a graph.** Make sure that you give your **graph a descriptive title.** Your title should explain what is happening in the experiment. Make sure to **label your axis** appropriately. Your label should include what is being measured, and the **units** of measurement. For example, Time (seconds).
6. **Write your answers in complete sentences.** The grader cannot assume anything, and can only give you credit for what you write. The more descriptive you are, the more likely you are to earn points.
7. **Show all work on calculations.** If a free response asks you to calculate something, there is probably a point given for the correct answer, and a point given for showing all of your work.

8. Remember that the free response is graded with a rubric, and you will be awarded points for the things that you say correctly. You will not be penalized for incorrect answers. **With that in mind, you should attempt every portion of each of the free response questions.**
9. Lately there have been some pretty complicated schematic diagrams on the free response portion of the test. There are boxes with arrows pointing every which way, and they often confuse students to the point that they don't really attempt the question. If you see a complicated schematic diagram, try to analyze it as a generic system. **Follow the arrows and ask yourself what is going into the system, what is happening in the system, and what is coming out of the system.** This will usually help you identify the important parts of the diagram, and help you formulate your answer.
10. **Make your grader happy! Imagine that your paper is going to be graded by a very tired grader with eye fatigue. Write your answer concisely, and neatly. Make it as easy as possible for your grader to read your answers.**

### **More Hints for doing well on the APES Exam**

1. YOU MUST SHOW YOUR WORK, be certain to write out all the steps clearly so the reader/grader can easily see and understand your work. Many students lose points because they do their math calculations in their heads or on a sheet of paper other than the answer sheet, and then fail to transfer the information onto the answer sheet.
2. No points are taken off for wrong or incorrect information, but simply writing a lot will not necessarily earn points—you must answer the question being asked. It is not uncommon for answers that fill two or three pages to earn no points.
3. Students will not receive points for restating the question. Embellishing and embroidering the question and then writing it down as an answer will receive no credit. Students must demonstrate knowledge and understanding.
4. Be careful when you interpret charts and graphs. Many students draw erroneous conclusions because they have misinterpreted a graph or chart.
5. Practice your math! Every AP Environmental Science student should be comfortable working with percentages, decimals, rounding, fractions, algebra, exponents, and scientific notation.
6. Outline form and bullets are not acceptable, answers must be written in prose style.
7. Students must demonstrate a deep understanding of the subject whether it's a biogeochemical cycle or a solar panel. Just throwing out terms, vocabulary and factoids is not enough.
8. Do not be fragmentary in your explanations, everything should fit together logically into a complete answer. Make sure you tie all the "pieces" of your answer together.
9. Make sure, whenever possible, to support your statements with examples. Good examples will let the reader/grader know that you understand what you are talking about. Often, examples are required to earn some of the points available on a question.