

## Biology CSET

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### Outline

#### I. Quiz

-answers

#### II. Textbook exercise

#### III. Strategies for studying

##### A. Practice exams

1. Can even get questions off the web

-ex. [http://www.testprepreview.com/cset\\_practice.htm](http://www.testprepreview.com/cset_practice.htm)

B. Identify weak spots and look up in guide or in textbooks

#### IV. Strategies for taking tests

##### A. Multiple choice

1. Timing through practice

2. Learn how to eliminate answers

3. Read question completely!!!!

##### B. Constructed answer responses

1. Again PRACTICE

2. Get familiar with question type and responses that are acceptable

#### V. Biology topics covered

##### A. Classification

##### B. Cell Biology

##### C. Physiology (mostly human)

1. Muscular

2. Nervous

3. Circulatory

4. Immune

5. Respiratory

6. Digestive

7. Excretory

8. Reproduction

##### D. Plant systems

1. Photosynthesis

2. physiology

##### E. Ecology

1. Ecosystems

2. Population growth rates

3. Community interactions

##### F. Evolution

##### G. Genetics

##### H. Life cycles

1. Cell cycle

Complete the exercise that follows.

A butterfly collector is studying a species of butterfly that has expanded its range into a new area over the last 30 years. The butterflies in the new area feed on a species of flower that has a deeper throat than the flowers exploited by the butterfly species in its original range. The average length of the proboscis that is used to suck nectar from flowers is also greater in butterflies that inhabit the new area. The collector hypothesizes that individual butterflies that moved into the area exploited the new flower grew longer proboscises during their lifetimes in order to reach the nectar. The gene for the longer proboscis was then inherited by the offspring of these individuals until the entire population consisted of butterflies with longer proboscises than butterflies in the original population.

Using your knowledge of evolutionary theory:

-Discuss the validity of the researcher's explanation for the increase in average proboscis length in butterflies inhabiting the new area; and

-Provide an alternative explanation that is consistent with accepted evolutionary theory for the change in proboscis length in butterflies inhabiting the new area.

## Constructed Response / Essay Writing in General

### Outlining/Organization

- Outlines will not count, but will help you choose important information and stay focused when you are writing.
- Make sure you answer the question, the whole question and nothing but the question.
- You don't need a thesis or conclusion paragraph.
- The prompt will have multiple parts; whenever possible, organize the paragraphs to answer each specific part.
- Don't restate the question, but do use key words from the question in your answer so the grader knows which part you are answering. (You could also use a header if you choose.)
- Use first person if you are asked "how would you ..."
- Don't tell what you are going to write, just write it.
- Assume the essay is being read by a peer who has a general understanding of the material and education, but don't use acronyms without clarification.
- While it is important to show what you know, the essays are the application portion of the test so don't just repeat jargon and textbook information, but do reflect your interpretation of the topic in a practical classroom or program sense and include personal experiences as they relate to the topic.
- if you don't have an example from your own life, make one up.
- Prompt words: if the test questions include these types of words, there are specific strategies to be used in answering them.
  - Describe: use adjectives, adverbs, and descriptive type phrases - paint a mental picture
  - Compare: analyze similarities and differences between two or more items Explain: give reasons to strengthen an argument -- answer "why "
  - Contrast: this is normally a comparison of two items - focusing on the differences
  - Discuss: a more open-ended approach, broader options available for answering this type of question, but you are expected to provide some depth
  - Argue or Present a Point of View: the writer must write from one point of view - pro or con and substantiate the position with evidence. Do not be worried about the right or wrong - as long as the position is supported, the actual position is not important.

### Rubrics

- A specific amount of points will be awarded for answering specific parts of the prompt.
- While outlining, consider what you will need to write to receive maximum points for each part and include this in your outline.
  - For example, in response to " describe a way to ... and give an example"
  - listing a term = 1 point
  - listing and elaborating on the term = 2 points
  - listing, elaborating and giving an example = 3 points
  - listing, elaborating, giving an example and explaining why the example works = 4 points
- Review between paragraphs and at the end of the essay to make sure you followed your outline

and answered the prompt.

- Depending on the rubric, you may be able to earn bonus points on one part to make up for what is missing in another. If you don't know how to answer one part, do your best to fake it and make your other sections as strong as possible.
- Most rubrics focus mainly on content, but grammar, spelling and handwriting always count toward the overall impression you give the grader. Use your most proficient writing skills in being concise, cohesive, convincing and fluid.

### **Potential Biology Essay Topics**

Hardy-Weinberg Equation

Structure, function and interrelationship of any organelles/cells/organs/systems

Mitosis, meiosis, cell cycle

Immune system, vaccination, AIDS/HN

Ecology, conservation, human impact

Important biological processes: photosynthesis, cellular respiration, homeostasis

Natural selection and speciation, bacterial resistance

Protein synthesis

Genetic engineering and bioethics

Experimental design