

## **Botany Knowledge and Comprehension Essay: Guidelines and Scoring Rubric**

Purpose of the essay: Demonstrate that you have thorough knowledge and comprehension of the core concepts of plant biology.

Poor essays sound like paraphrased textbooks. They fail to make a connection between actual organisms and the topics of the essay. Good essays use specific plant species as examples when describing how plants engage in the activities that are the topics of the body of the essay.

### **Table of Contents**

Topics listed in the table of contents will also be the subheadings for the sections of your essay.

Your essay needs to include the following topics:

1. Introduction
2. Plants are like other organisms in regard to:
  - a. basic metabolism
  - b. sexual reproduction
  - c. clonal reproduction
  - d. hormonally regulated development
  - e. ability to respond to the environment
  - f. diversity
  - g. evolution
3. Plants are unique organisms in:
  - a. their varied life histories - especially a sporic one with alternation of generations
  - b. their role as primary producers in food webs:
    - i. photosynthesis
    - ii. mineral assimilation
  - c. their role in oxygenation of the atmosphere and the consequences of that process
4. Plants serve as an important source of products: food, fiber, flavorings, feed, fuel, pharmaceuticals, etc.
5. Conclusion

### **Introduction**

Make it personal. What brought you to botany? How does that affect your POV in the essay? Indicate the classes and other relevant experiences you have had that inform your essay.

Define what you mean when you use the word “plant” in the essay.

Introduce the specific topics you will be covering, in the same order that you will use in the body of the essay. Provide a preview of what is to come.

### **Body of the Essay**

Each topic will be assessed for:

level of coverage (from “street answers” to upper division)

depth of coverage (from generic or superficial to specific examples of species that have a certain adaptation and its apparent role in that species’ survival)

accuracy of information and effective use of references to document the accuracy

effective use of illustrations

Suggestions for working on the body of the essay:

Treat the essay as a collection of short essays on specific topics. Work on the essay by topic. Once you have written the short essays, string them together with transition paragraphs, subheadings, etc.

For each topic:

Collect information on a particular topic. Be sure your collection includes details, specificity as to organism, and reference citation(s).

Review the information that you have collected on a topic. Decide which pieces of information to include in the essay.

Write the essay on that topic.

Use the introduction and conclusion of each mini-essay to transition between topics.

## **Conclusion**

Should parallel the Introduction. Summarize the main points. Unite the main points into a single take home message. Re-state your personal perspective.

## **Reference requirements:**

Minimum of 15 references.

- a. Minimum of 5 references from the primary literature.
- b. Maximum of 5 quality web sites. Excludes digital archives of print journals (JSTOR) and books (Project Gutenberg, Darwin Online), online journals (PLoS).
- c. Maximum of 5 textbooks. No limit on other secondary sources such as monographs/books, review articles, popular articles from suitable sources (*Natural History*, *Smithsonian*).
- d. CSE (CBE) format. Author-year for in text citations.

## **Illustrations**

Minimum of five illustrations.

The web site number restriction does not apply to illustrations.

Do not integrate the illustrations into the text. Each illustration gets its own page, with tables numbered in one series and figures in another. Each illustration needs a legend (caption); see the illustrations in *Biology of Plants* for examples of legends. List the credits for the illustrations in an Illustration Credits list after the References Cited list; see pages IC-1 through IC-5 in *Biology of Plants* for examples. If you modify an illustration, indicate that you have done so in the legend.

## Scoring the essay

	weight	raw score (0-4)	weighted score
Mechanics	0.10		
References	0.05		
Illustrations	0.05		
Introduction and Conclusion	0.10		
Body of the Essay level depth use of specific examples accuracy	0.60		
Evidence of revisions	0.10		
		Total	

### Mechanics

4 = Essentially free of typos, spelling errors, format errors, grammar errors, etc. Has an Outline or Table of Contents, pages are numbered, and subheadings are used to show the organization of the essay. Sources have complete bibliographic information and are cited correctly (CSE).

3 = Substantially free of typos, spelling errors, format errors, grammar errors, etc. Errors do not detract from the essay. Has an Outline or Table of Contents, pages are numbered, and subheadings are used to show the organization of the essay. Sources have complete bibliographic information; citations not consistently in CSE format.

2 = Mechanical errors detract from the essay, but the narrative of the essay can still be followed. Missing Outline/Table of Contents, page numbers, and/or subheadings. Bibliographic information for sources is incomplete and/or not in CSE format.

1 = Mechanical errors detract from the essay to the point that the narrative of the essay is difficult to follow. Missing Outline/Table of Contents, page numbers, and/or subheadings. Bibliographic information for sources is incomplete and not in CSE format.

0 = Mechanical errors render the essay unreadable.

### References

4 = over 20 references are cited; over 8 of the references are from the primary literature

3 = 15-20 references are cited; 5-8 of the references are from the primary literature

2 = minimum reference requirement met

1 = minimum reference requirement not met: less than five references from the primary literature; less than 15 references total

0 = no references from the primary literature

### Illustrations (Figures and Tables)

4 = 9 or more illustrations. The illustrations enhance the essay and their reason for inclusion is clear. Illustrations are captioned and attributed.

3 = 6-8 illustrations. Captions and attributions are not always complete.

2 = 5 illustrations. Captions and attributions are not always complete.

1 = 1-4 illustrations. Illustrations are included to avoid a score of zero. It is not clear why some of the illustrations were included. It is apparent that additional illustrations could have been used.

Captions and attributions are not always complete.

0 = No illustrations.

### **Introduction and Conclusion**

4 = All of the information asked for in the guidelines is present. The narrative flows easily, with smooth transitions between the subjects that need to be included.

3 = Some of the information is missing. Otherwise, as in 4.

2 = Some of the information is missing. The narrative is choppy and reads like a list. Transitions are not effective.

1 = Either the Introduction or the Conclusion is essentially missing.

0 = Both the Introduction and the Conclusion are essentially missing.

### **Body of the Essay**

Scoring is per topic. A missing topic scores 0.

4 = The level of coverage is that which would be expected of a student who has mastered upper division course work. The student makes use of specific plants and appropriate illustrations to demonstrate the points being made about the topic. The information is accurate and referenced. The narrative flows well with smooth transitions.

3 = The level of coverage is that which would be expected of a student who has mastered upper division course work. For the most part, the student makes use of specific plants and appropriate illustrations to demonstrate the points being made about the topic. For the most part, the information is accurate and referenced. The narrative flows well with smooth transitions.

2 = The level of coverage is that which would be expected of a student who has mastered lower division course work. The student occasionally makes use of specific plants and appropriate illustrations to demonstrate the points being made about the topic. Inaccuracies detract from the essay. The information is poorly referenced. The narrative is choppy.

1 = The level of coverage is at or below that which would be expected of a student who has mastered lower division course work. The student rarely makes use of specific plants to demonstrate the points being made about the topic. Illustrations are rare. Inaccuracies detract from the essay. Information is not referenced. The narrative is choppy.

0 = The topic is either missing or very poorly covered. The level of coverage is below that which would be expected of a student who has mastered lower division course work.

### **Evidence of Revisions**

4 = Final version of the essay as well as earlier versions are included in the portfolio to illustrate development of knowledge and comprehension of Botany. Early versions include work done outside of required course work and required work for classes other than 2121 or 4980.

3 = Final version of the essay as well as earlier versions are included in the portfolio to illustrate development of knowledge and comprehension of Botany. Early versions include required work for classes other than 2121 or 4980.

2 = Final version of the essay plus versions done for BTNY 2121 and BTNY 4980.

1 = Only the final essay is turned in.

0 = Essay is missing or represents only a token attempt at composition.