

Ecosystem Column Lab Questions (Be thinking of these as the lab progresses)

Answer the following questions in complete sentences, (typed double spaced) providing sufficient detail and explanations. Response should be clear, organized, and as comprehensive as possible.

1. Propose three possible reasons why there are such large differences between the Ecosystem Columns in the lab.

2. Identify two Food Chains or Food Webs in each of your habitats (chambers). Use arrows to illustrate these food chains and food webs; complete sentences are not required for question 2 a, b, or c.

a. (a)Aquatic Chamber

b. (b)Decomposition Chamber (top soil chamber)

c. (c)Terrestrial Chamber

3. Identify and briefly discuss the biogeochemical cycles which are taking place/which are present in your EcoColumns.

4. Compare your lab group's somewhat "contrived" or "manufactured" ecosystems with ecosystems found outside the classroom. Describe (i) three similarities and (ii) three differences.

5. Is your ecosystem column a closed or open system? --- or is it something in between a closed or open system? Explain how this (closed, open or other) influences the ecosystem column overall.

6. Over the course of the last 6 weeks, you have likely observed the Law of Tolerance in action. Discuss three specific examples of this ecological principle or law regarding your ecosystem column.

7. Discuss five limiting factors in your habitats, clearly stating which chamber(s) you are referring to.

8. Discuss evidence of ecological succession taking place in your column (or in the column of another lab group if you have not observed any signs of succession in your column).

9. Discuss the stability and sustainability of the ecosystem columns in the lab, including your own.

10. Discuss three trends or patterns which stand out as you think back on the data which you have been recording for 6 weeks. These trends or patterns should apply to the water quality tests or other observations which you have made over this multi-week time period. Briefly discuss these three trends or patterns, providing possible explanations based on environmental science principles.

11. Explain what eutrophication refers to and how this occurs. Apply this explanation

to your ecosystem column. How might eutrophication take place in your column? Explain fully.

12. If you could add another chamber to your column, other than simply placing an extension on top or increasing the volume of each chamber, what type of chamber would you add? You need to come up with some feasible, realistic, and perhaps creative additional chamber. (Do not state that you would "leave it as it is").