NAME

PART 1 (84 points) DEFINITION OF KEY TERMS.

· Define each of the 7 terms simply & correctly. Examples are not necessary.

#1 Spore

#2 Mitosis

#3 Ovule

#4 Cone

#5 Chlorophyll

#6 Enzyme

#7 Hormone

PART 2 (72 points) EXPLANATION OF KEY CONCEPTS.

· Explain each of 3 concepts simply & correctly.
· State why this concept is important to Botany or Plant Biology.
· +1 Give an example (taxonomic name or common name) that illustrates this concept.

#1 Explain either FERTILIZATION (sexual) –or- ENDOSPORIC (circle the 1-concept you are explaining)

#2 Explain either LATERAL MERISTEM –or- LIGHT INDEPENDENT REACTIONS

#3 Explain either ANAEROBIC RESPIRATION –or- AEROBIC RESPIRATION

PART 3 (44 points) Pick 1-essay question from the 2 given below & provide a written answer on page 6.

· Mark the 1-question you are answering
· Think before you write. Organize your information. Use examples if helpful.
· Respond only to what you are asked (more text tends to increase your chance of making mistakes).
· Write neatly.
· Write your answer in complete sentences (use standard English & proper grammar).

The evolutionary transition of "plants" from life in water (the algae) to life on land (culminating in the flowering plants) is one of the unifying themes of Plant Biology. This evolutionary history has many associated changes in plant anatomy, ecology, physiology, & reproduction.

MIXED LIST OF TERMS: Diploid (2N), Embryo, Gametophyte, Meiospores, Sporophyte, Gametangium, Haploid (N), Mitosis, Sex Cycle, Zygote, Gametes, Meiosis, Sporangium

ESSAY QUESTION #1:

· 22 pts. Use the Sporic Life Cycle to *highlight how the anatomy of "plants*" changed from its initial occurrence in the algae to its expression in the "nonvascular land plants".

A) USING THE TERMS LISTED ABOVE make 1-general diagram of the Sporic Life Cycle.
B) Provide a clear explanation of what happens in the Sporic Life Cycle & how it changes from its initial occurrence in the algae to its expression in the "nonvascular land plants".

· 22 pts. How do the "algae" differ (in fundamental ways) *in their existence* from the "nonvascular land plants".

C) Highlight how plant anatomy changed in *"algae" vs. "nonvascular land plants"* evolutionarily in specific ways with respect to gas exchange, water absorption, & water conservation.
D) Compare and contrast the appearance of spores/gametes & sporangia/gametangia in "algae" vs. "nonvascular land plants".

- OR –

ESSAY QUESTION #2:

22 pts. Use the Sporic Life Cycle to *highlight how the anatomy of "plants"* changed from its initial occurrence in the algae to its expression in the "land plants" (seed plants).

A) USING THE TERMS LISTED ABOVE make 1-general diagram of the Sporic Life Cycle.
B) Provide a clear explanation of what happens in the Sporic Life Cycle & how it changes from its initial occurrence in the algae to its expression in the "seed plants".

· 22 pts. How do the "algae" differ (in fundamental ways) *in their existence* from the "vascular plants".

C) Highlight how plant anatomy changed in *"algae" vs. "seed plants"* evolutionarily in specific ways with respect to gas exchange, water absorption, & water conservation.
D) Compare and contrast the appearance of spores/gametes & sporangia/gametangia in "algae" vs. "seed plants".