

Read each question carefully. There are 4 questions in the assignment. Due 4/9/09

1. **(1.5 pt.)** Name at least two lines of evidence that has been used to argue that the *Chlorophytes* [or green algae] are considered ancestral to land plants?

(i) **Thick cell walls.**

(ii) **Estuarine habitat, as well as spore reproductive cycle.**

2. **(1.5 pts.)** The fossil record reveals that trilobites underwent periodic mass extinctions during the early Paleozoic and finally reached their demise in the Permian. One hypothesis used to explain these events invokes the sudden and temporary cooling of the seas. Can you name at least one line of evidence to support this hypothesis?

Deep (cold) water species survived until the end of the Permian.

3. **(0.5 pts.)** Which of the following choices does **NOT** represent therapsid reptile characteristics indicating eventual [true] mammal evolution in the early Mesozoic?

A. Fewer bones in the skull and an enlarged lower jaw

B. double ball-and-socket articulation of skull and neck bones

C. Limbs direct outward projecting and horizontal on the sides of the body

D. ribs reduced in neck and lumber region to promote flexibility

E. Differentiation of teeth into incisors, canines, etc.

4. **(1.5 pts.)** Name two evolutionary developments in the Paleozoic that allowed seed plants to expand and diversify on land relative to spore-producing plants. (My comment to this question that I want you to think about here is: *This was almost certainly an evolutionary response by plants to the expansion of dry-land area at the end of the Paleozoic, a consequence of changing plate configurations and therefore changing climates.*) – Use the space below to answer the question.

(i) Adaptation of the reproductive cycle to dry climates with the origin of a hard-shelled seed that protects the fertilized ovum (“germ”) from dehydration.

(ii) Complex root and vascular systems to extract water and nutrients from soil.



“Anthropologists! Anthropologists!”