

Biology 375 – Evolution  
Fall 2007 – Dr. Carey – Exam 1

1. Define: (3 pts each)
  - A. method of tenacity
  - B. catastrophism
  - C. atavism
  - D. law of parsimony
  - E. regulatory gene
  - F. transversion
  
2. Distinguish between particulate and blending inheritance. Why was the commonly accepted blending theory in the 19<sup>th</sup> century a problem for the acceptance of Darwin and Wallace’s hypothesis of evolution by natural selection? How did particulate inheritance partially get around this problem? Even with particulate inheritance, there was a problem in accepting natural selection as a major evolutionary force. What was it? (20 pts)
  
3. On page 19 of the “Troubled Waters of Evolution” handout there is this statement: Energy conversion in a plant takes place through an amazingly complex process called photosynthesis. “This process could never create itself or just **randomly** happen, but there it is” (my emphasis). Do you agree that this process could never just randomly happen? Why or why not? If you agree, is that a flaw in evolutionary theory? Why or why not? If you do not agree with quote, is Intelligent Design a possible scientific explanation for the process? Why or why not? (20 pts)
  
4. Define canalization. Under what conditions is it likely to be common? Of the 3 general means by which selection can affect a polygenic trait, describe the one that is most likely to fit the canalization scenario. (20 pts)
  
5. Define translocation. How might such an event be selectively advantageous? (12 pts)
  
6. Distinguish between a valid and a useful hypothesis. Which one is a true statement? (10 pts)