The Biology of Communication
This question asks you to expound on a number of related but separate issues about communication.

A. Define communication in a biological context.
B. Across life in general, what are the sensory modalities involved in communication? First just provide a simple list with a brief explanation for each. Then use diverse examples to discuss how the sensory modalities that are involved relate to the ecology of communication systems. Does physiology constrain the evolution of communication or does physiology evolve as needed to permit ecologically appropriate communication?

C. Assume you are starting with a lineage where communication among individuals is absent. Given your definition of communication above, and the various modalities used to “communicate”, provide a general but elaborated scenario of how communication between individuals may evolve in this lineage that can serve as a general hypothesis for the evolution of communication. A deep hypothesis of this scenario would include the properties of species that do not communicate, evolutionary forces that would favor communication and the ecological agents that would foster these evolutionary forces, and the resulting properties of the lineage of communicators.
D. Do predators and prey communicate under your definition? We want you to argue both the yes, and the no answers to this question.

E. Finally, you have been asked to contribute to an offering of “Bio 11: The Science of Life. Communication.” Identify 3 theories that you would want to highlight in your lectures. Briefly summarize each of them in terms of the essential postulates and emergent properties. (Recall that the broad objectives of Bio 11 are to expose students to general principles in biology and to attract them as biology majors).