

Name \_\_\_\_\_

# AP BIOLOGY EXAM ELEVEN

## FREE RESPONSE QUESTION

Scientists use the concept of homology in identifying evolutionary relationships among organisms. Features shared by two groups of organisms are said to be homologous if the similarities reflect shared ancestry. Homology is found in comparisons of structural, molecular, biochemical, developmental, physiological, and behavioral characteristics of organisms. Select **THREE** of the following hypotheses and explain **TWO** examples of homology that support each hypothesis.

- (a) Chloroplasts are related to photosynthetic prokaryotes.
- (b) Spiders and insects are closely related.
- (c) Echinoderms (sea stars and their relatives) are closely related to the chordates (the phylum that includes vertebrates).
- (d) Reptiles and birds are closely related.
- (e) Humans and chimpanzees are closely related primates.