

Biology 370 - Animal Behavior
Spring 2008 - Dr. Carey - Exam 1

1. Define: (3 pts each)
 - A. developmental homeostasis
 - B. releaser
 - C. latent learning
 - D. intrasexual selection
 - E. spite
 - F. ESS

2. Distinguish between proximate and ultimate causation of behavior. What sort of causation do you think the following statement is talking about? –“ It has been found that males that dominate in dominance hierarchies have significantly higher levels of sex hormones than individuals at the bottom of the hierarchy. Thus dominance is caused by high sex hormone levels.”-- Logically support your choice. Make up a hypothesis that would explain the alternative sort of causation of dominance. (20 pts)

3. Inclusive fitness is defined as direct fitness plus indirect fitness. Define both of those fitness components. When Hamilton first proposed the hypothesis, he used the term kin fitness instead of indirect. Why do you think people changed Hamilton’s terminology; in other words, why is kin fitness not considered as good a term to use as indirect fitness? (12 pts)

4. In your text is a discussion of the tendency of different garter snake populations to eat or not eat banana slugs. Assuming that it is likely that more than one gene may influence this difference in food preferences, describe in detail 2 testing methods that could be used to support the hypothesis that there is genetic influence on the tendency? (24 pts)

5. Outline the experimental approach to testing adaptationist hypotheses. What is the major drawback of this approach? (14 pts)

6. Explain the logic behind Hamilton’s equation that describes the conditions under which altruism will actually be of fitness benefit to the altruist individual. (12 pts)