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- 1. T / F Asking about how a stimulus is sent from the brain to the muscle tissue is a type of proximate question.
- 2. T / F Predation can be considered a type of foraging because it exemplifies all the characteristics of foraging.
- 3. T/F As populations increase, the competitive pressure between conspecifics decreases.
- 4. T / F Better habitats always result in higher fitness.
- 5. T / F Migration can be the result of competitive inferiority in a space with limited habitat and resources.

behavior might occur. True / False CHANGE:
7FITNESS is defined as the sum of both one's own genetic offspring and a fractional portion of the offspring of related individuals. True / False CHANGE:
8. CONDITIONAL STRATEGIES are those strategies that rely on a threshold of stimuli to be initiated or changed. True / False CHANGE:
9. QUANTITATIVE TRAITS are those traits that are multi-genetic, epistatic and based on the summation and combination of several genes. True / False CHANGE:

- 10. THE CRYPTOCHROME HYPOTHESIS is a navigational hypothesis that suggests that navigational acuity is driven by densities of metal compounds in the cells of migrating and nomadic groups.
- 11. According to Hamilton's rule, an animal may choose to act altruistically to others when
- a. Br<C
- b. Br>C
- c. Br=C
- d. B=C
- e. B<Cr
- 12. When using Hamilton's rule, what does "r" refer to?
- a. The relatedness of each relative to the focal animal
- b. The total number of genomes of the focal animal represented by all the offspring
- c. The reproductive success of the focal animal
- d. The reproductive success of relatives
- e. The number of relatives in the immediate system
- 13. A Galapagos finch species is able to eat three seed types. Given the values below, which is the most economically grounded explanation for which seed these finches will eat the most of? Select one answer.

Seed A: Large seed (E=11) with hard exterior that is difficult to crack (h=10) but abundant on the islands (s=0)

Seed B: Medium seed (E=7) with a shell that has mild toxins (h=1) but rare during most of the season (s=5)

Seed C: Small seed (E=2) with a very thin shell but requires some chasing because it is easily carried by the wind (h=1) and exists in patchy piles than can be very spaced out (s=4).

- a. Seed A only because it has the most energy
- b. Seed B only because it has the lowest handling/ processing time
- c. Seed C only because the fraction calculated is less than 1.
- d. Seeds A and B equally because they both have a net positive of 1 energy point

- e. Seeds B and C equally because they both have equally low handling and processing times.
- 14. Which of the following are possible effects from increases in population density in one area? Select all that apply.
- a. Migration
- b. Reduction of resources
- c. Habitat degradation
- d. Changes in behavioral strategies
- e. Increased reproduction rate
- 15. Which (one) of the following predation styles and adaptations are incorrectly paired? a.

Herbivory :: digestion and teeth

- b. Carnivory :: speed and agility
- c. Compensatory predation :: speed and agility
- d. Scavenging:: scent and immunity
- e. Additive predation:: sight and scent



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