Name: Score:

40 Multiple choice questions

Term 1 of 40

What is the consequence for bats that refuse to share food?

- They may be denied food by others when they are hungry, illustrating the importance of reciprocal altruism.
- They establish dominance by refusing to share resources.
- They are more likely to survive during scarcity due to independence.
- They may gain additional resources by hoarding food.

Term 2 of 40

How does group size affect competition for food?

- Larger groups reduce food consumption per member, ensuring abundance for all.
- Larger groups enhance individual foraging skills, leading to less sharing.
- Larger groups may find food less frequently but hoard more for themselves.
- Larger groups may locate food more effectively but must share it among all members, leading to increased competition.

Term 3 of 40

How does a subordinate male gain indirect fitness?

- By competing with a brother for mating rights, allowing the brother to sire 3.2 offspring.
- By helping a brother or half-brother successfully mate, allowing the brother to sire 6.1 offspring.
- By mating with a sister, allowing her to sire 4.5 offspring.
- By preventing a brother from mating, ensuring his own offspring are more successful.

Term 4 of 40

What is a dominance hierarchy?

- A system of cooperation among individuals for resource sharing.
- A social ranking based on age and experience within a group.
- A hierarchy determined by mating rituals and courtship displays.
- A social ranking among individuals in a group, typically determined through contests of strength or skill.

Term 5 of 40

What is the impact of group living on the energy expenditure of animals?

- In larger groups, individuals may expend more energy on territorial defense.
- In larger groups, individuals may expend more energy searching for food due to increased competition.
- In larger groups, individuals conserve energy by reducing activity levels.
- In larger groups, individuals expend less energy due to shared responsibilities.

Term 6 of 40

What are the key characteristics of termite colonies?

- Termite colonies are dominated by a mated king and queen pair, with the queen's abdomen enlarged for egg production, and offspring can act as workers or become sexually mature if the king/queen dies.
- They provide indirect fitness benefits to the donor, weighted by the coefficient of relatedness.
- Alders near a manually defoliated shrub experienced less herbivory compared to those further away, suggesting a form of social interaction.
- Chemical signals could serve as warnings for relatives, fight microbial infections, or stimulate defenses in other leaves on the same plant.

Term 7 of 40

What is unique about snapping shrimp in terms of eusociality?

- Ecological conditions influence the magnitude of costs and benefits associated with social behaviors in animals and plants.
- A lek is a site where animals aggregate to attract mates through displays or calls, with no other purpose than mating.
- C/B < r, meaning the cost to the donor must be low, the benefit to the relative must be high, and they must be closely related.
- Snapping shrimp are the only known eusocial marine animals, living in groups with queens and nonbreeding helpers, and have a high relatedness coefficient (r = 0.7).

Term 8 of 40

What is the fitness benefit of a female worker raising her fertile sister?

- The same fitness benefit as raising her own offspring due to higher relatedness (r = 0.75).
- Less fitness benefit than raising her own offspring due to lower relatedness (r = 0.25).
- No fitness benefit as relatedness is too low (r = 0.10).
- Greater fitness benefit due to shared resources (r = 0.90).

Term 9 of 40

How do snapping shrimp defend their colonies?

- They use a specialized large claw to shoot bubbles that stun or kill intruders.
- They specialize in tasks such as defending and foraging for the group or caring for offspring.
- Snapping shrimp are the only known eusocial marine animals, living in groups with queens and nonbreeding helpers, and have a high relatedness coefficient (r = 0.7).
- They do not reproduce but contribute to the colony's success through specialized roles.

Term 10 of 40

What is the focus of Chapter 11 in the context of social behaviors?

- Chapter 11 discusses the costs and benefits of living in groups, types of social interactions, eusocial species, and social interactions in plants.
- Chapter 11 focuses on mating rituals, territorial behaviors, and migration patterns in animals.
- Chapter 11 discusses foraging strategies, predator-prey interactions, and habitat selection in plants.
- Chapter 11 explores communication methods, territorial marking, and group hunting in animals.

Term 11 of 40

What are the four types of social interactions discussed in Chapter 11?

- The four types of social interactions are cooperation, altruism, selfishness, and spite.
- The four types of social interactions are cooperation, parasitism, individualism, and neutrality.
- The four types of social interactions are symbiosis, commensalism, antagonism, and neutrality.
- The four types of social interactions are competition, mutualism, parasitism, and predation.

Term 12 of 40

What is haplodiploid sex-determination?

- Cooperation, selfishness, spitefulness, and altruism.
- Subordinate males display at leks even without mating opportunities because they are more closely related to other males in the group.
- In haplodiploidy, sons are produced from unfertilized eggs (haploid) and daughters from fertilized eggs (diploid).
- 0.5.

Term 13 of 40

What is a lek in the context of animal mating?

- A lek is a location where animals hunt and store food.
- A lek is a site where animals gather for hibernation and shelter.
- A lek is a territory marked for exclusive feeding purposes.
- A lek is a site where animals aggregate to attract mates through displays or calls, with no other purpose than mating.

Term 14 of 40

What is the expected outcome when altruism is present in a population?

- Altruism can result in increased competition and resource depletion within the population.
- Altruism can cause a decline in genetic diversity due to reduced individual reproduction.
- Altruism can lead to decreased survival and reproductive success of unrelated individuals.
- Altruism can lead to increased survival and reproductive success of related individuals, benefiting the population as a whole.

Term 15 of 40

How do plants exhibit social interactions?

- Plants can communicate through root systems to share nutrients, indicating social interactions.
- Plants can have defense responses when neighboring individuals are attacked by herbivores, indicating social interactions.
- Plants can release pheromones to attract pollinators, demonstrating reproductive interactions.
- Plants can alter their growth patterns based on sunlight availability, showing individual adaptation.

Term 16 of 40

Under what conditions do dominance hierarchies form?

- Dominance hierarchies form when group size is small and isolated.
- Dominance hierarchies form when individuals prefer solitary behavior.
- Dominance hierarchies form when resources are ephemeral or when group benefits outweigh the need for territory defense.
- Dominance hierarchies form when resources are stable and territory is easily defended.

Term 17 of 40

What is the Dilution Effect?

- The Dilution Effect describes the enhanced ability of a group to attract predators by increasing their visibility.
- The Dilution Effect refers to the reduced probability of predation for an individual in a group, as the risk is spread out among many.
- The Dilution Effect refers to the increased probability of survival for an individual in isolation due to reduced competition.
- The Dilution Effect relates to the concentration of resources around a single individual in a group.

Term 18 of 40

What is kin selection?

- The process where competition between unrelated individuals is maximized.
- The process where natural selection favors solitary survival.
- The process where indirect fitness through relatives is favored by natural selection.
- The process where individuals select mates based on physical traits.

Term 19 of 40

How is direct fitness favored?

- By helping a brother or half-brother successfully mate, allowing the brother to sire 6.1 offspring.
- Through direct selection.
- Through indirect selection (kin selection).
- Both the donor and recipient experience reduced fitness, which cannot be favored by natural selection.