Name: Score:

17 Multiple choice questions

Term 1 of 17

How did the lion population change from 1960 to 1975?

- ○ The lion population declined drastically due to hunting.
- ○ The lion population increased significantly during this period.
- ○ The lion population fluctuated widely due to disease outbreaks.
- ○ The lion population remained relatively stable during this period, unlike the drastic increase in the buffalo population.

Term 2 of 17

How do wildebeests influence tree populations in the Serengeti?

- ○ Wildebeests eat grass in patches, reducing fires and allowing tree populations to increase in areas they graze, while areas they avoid can experience more fires and decreased tree populations.
- ○ Wildebeests improve habitat quality for birds by reducing vegetation that could fuel wildfires, allowing diverse plants to grow.
- ○ Wildebeests are considered a keystone species as they help maintain habitat quality for other species through their grazing habits.
- ○ The Serengeti experiences a cool and dry season from May to August, a dry and warmer season in September and October, and a wetter and hot season from November to April.

Term 3 of 17

What types of plants do buffalo and wildebeests primarily consume?

- ○ Buffalo and wildebeests primarily eat fruits and seeds.
- ○ Buffalo and wildebeests primarily eat aquatic plants and algae.
- ○ Buffalo and wildebeests primarily eat grasses and sedges.
- ○ Buffalo and wildebeests primarily eat shrubs and trees.

Term 4 of 17

How do wildebeests affect bird populations in the Serengeti?

- ○ Wildebeests disrupt bird migration patterns by altering water sources.
- ○ Wildebeests improve habitat quality for birds by reducing vegetation that could fuel wildfires, allowing diverse plants to grow.
- ○ Wildebeests reduce bird populations by destroying nesting sites.
- ○ Wildebeests decrease habitat quality for birds by overgrazing grasslands.

Term 5 of 17

What is the 10% rule in trophic levels?

- ○ The 10% rule states that 90% of energy is lost as heat in an ecosystem.
- ○ The 10% rule states that energy is doubled at each trophic level in an ecosystem.
- ○ The 10% rule states that only ten percent of energy is passed from one trophic level to the next in an ecosystem.
- ○ The 10% rule states that ten percent of energy is stored as biomass at each level.

Term 6 of 17

What is the difference between direct and indirect relationships in an ecosystem?

- The Serengeti has a large concentration of herbivores and a high diversity of species due to its varied habitats.
- The Serengeti experiences a cool and dry season from May to August, a dry and warmer season in September and October, and a wetter and hot season from November to April.
- Direct relationships involve the immediate impact of one individual on another, while indirect relationships are mediated by a third party. For example, wildebeests directly affect vegetation, which indirectly impacts bird populations.
- There is not enough energy to support additional trophic levels due to the high rate of energy loss in food chains.

Term 7 of 17

What are the seasonal weather patterns in the Serengeti?

- There is not enough energy to support additional trophic levels due to the high rate of energy loss in food chains.
- The Serengeti has a large concentration of herbivores and a high diversity of species due to its varied habitats.
- The Serengeti experiences a cool and dry season from May to August, a dry and warmer season in September and October, and a wetter and hot season from November to April.
- Wildebeests are considered a keystone species as they help maintain habitat quality for other species through their grazing habits.

Term 8 of 17

How do scientists measure biomass in plants?

- Scientists measure biomass by dehydrating the plant to remove all moisture before weighing it.
- Scientists measure biomass by assessing the plant's height and width.
- Scientists measure biomass by analyzing the plant's root system in soil.
- Scientists measure biomass by counting the number of leaves on the plant.

Term 9 of 17

What caused the decline of the buffalo population after 1975?

- The buffalo population declined due to habitat destruction by humans.
- The buffalo population declined due to competition with the increasing wildebeest population for the same food supply.
- The buffalo population declined due to disease outbreaks.
- The buffalo population declined due to increased predator activity.

Term 10 of 17

What can we conclude about biodiversity in the Serengeti?

- The Serengeti has a low concentration of herbivores and limited species diversity due to its arid climate.
- The Serengeti is dominated by predators with minimal plant life and few herbivore species.
- The Serengeti has a large concentration of herbivores and a high diversity of species due to its varied habitats.
- The Serengeti has a uniform habitat with low biodiversity and a scarcity of resources.

Term 11 of 17

What are some characteristics of buffalo?

- Buffalo have spiral horns and thrive in cold climates, consuming minimal water.
- Buffalo have triangular-shaped horns in cross-section and are very dependent on water, drinking 35 to 40 liters a day.
- Buffalo have rounded horns and prefer dry habitats, needing little water.
- Buffalo have flat horns and are adapted to aquatic environments, requiring constant water.

Term 12 of 17

What is carrying capacity?

- ○ Carrying capacity is the average size of a population over time in any environment.
- ○ Carrying capacity is the rate at which a population grows in ideal conditions.
- ○ Carrying capacity is the total number of species in an ecosystem.
- ○ Carrying capacity is the maximum number, density, or biomass of a population that a specific area can support sustainably.

Term 13 of 17

How does water availability affect buffalo migration?

- ○ Buffalo migrate to higher altitudes for better grazing conditions.
- ○ Buffalo migrate to find warmer climates during winter.
- ○ Buffalo migrate to avoid predators in dry seasons.
- ○ Buffalo do not migrate due to their constant water demand, especially during dry seasons when competition for food increases.

Term 14 of 17

What role do wildebeests play in the Serengeti ecosystem?

- ○ Wildebeests are an invasive species that disrupts habitat balance for other species.
- ○ Wildebeests are considered a predator species that controls herbivore populations.
- ○ Wildebeests are a minor species that has little impact on the ecosystem.
- ○ Wildebeests are considered a keystone species as they help maintain habitat quality for other species through their grazing habits.

Term 15 of 17

What factors contributed to the increase of the buffalo population from 1960 to 1975?

- ○ Improved habitat conditions, decreased predation pressure, and reduced hunting or poaching contributed to the buffalo population growth.
- ○ Increased competition with other species, habitat loss, and overhunting led to population decline.
- ○ Habitat degradation, increased predator populations, and human development hindered buffalo growth.
- ○ Climate change, reduced food availability, and increased disease contributed to the decrease in buffalo numbers.

Term 16 of 17

Why is the energy pyramid limited to 4 or 5 trophic levels?

- ○ There is not enough energy to support additional trophic levels due to the high rate of energy loss in food chains.
- ○ Trophic levels are limited by the availability of water.
- ○ There is too much competition for resources at higher levels.
- ○ Energy is lost through photosynthesis at each level.

Term 17 of 17

What are the general migration patterns for wildebeests and zebras?

- ○ Wildebeests migrate south in March and return north in September, while zebras migrate east in June and west in December.
- ○ Wildebeests migrate north in May and return south in November, while zebras follow similar patterns.
- ○ Wildebeests migrate west in August and return east in February, while zebras migrate north in April and south in October.
- ○ Wildebeests migrate east in January and return west in July, while zebras follow opposite patterns.