PARAGRAPH 2

How are we to understand their different feeding preferences? The answer lies in two associated differences among the species, in their digestive systems and body sizes. According to their digestive systems, these herbivores can be divided into two categories: the nonruminants (such as the zebra, which has a digestive system like a horse) and the ruminants (such as the wildebeest, topi, and gazelle, which are like the cow). Nonruminants cannot extract much energy from the hard parts of a plant; however, this is more than made up for by the fast speed at which food passes through their guts. Thus, when there is only a short supply of poor-quality food, the wildebeest, topi, and gazelle enjoy an advantage. They are ruminants and have a special structure (the rumen) in their stomachs, which contains microorganisms that can break down the hard parts of plants. Food passes only slowly through the ruminant's gut because ruminating—digesting the hard parts—takes time. The ruminant continually regurgitates food from its stomach back to its mouth to chew it up further (that is what a cow is doing when "chewing cud"). Only when it has been chewed up and digested almost to a liquid can the food pass through the rumen and on through the gut. Larger particles cannot pass through until they have been chewed down to size. Therefore, when food is in short supply, a ruminant can last longer than a nonruminant because it can derive more energy out of the same food. The difference can partially explain the eating habits of the Serengeti herbivores. The zebra chooses areas where there is more low-quality food. It migrates first to unexploited areas and chomps the abundant low-quality stems before moving on. It is a fast-in/fast-out feeder, relying on a high output of incompletely digested food. By the time the wildebeests (and other ruminants) arrive, the grazing and trampling of the zebras will have worn the vegetation down. As the ruminants then set to work, they eat down to the lower, leafier parts of the vegetation. All of this fits in with the differences in stomach contents with which we began.

4. The word "associated" in the passage is closest in meaning to

- ○ obvious
- ○ significant
- ○ expected
- ○ connected

5. The author mentions the cow and the horse in paragraph 2 in order to

- ○ distinguish the functioning of their digestive systems from those of East African mammals
- ○ emphasize that their relatively large body size leads them to have feeding practices similar to those of East African mammals
- ○ illustrate differences between ruminants and nonruminants through the use of animals likely to be familiar to most readers
- ○ emphasize similarities between the diets of cows and horses and the diets of East African mammals

6. According to paragraph 2, which of the following herbivores has to eat large quantities of plant stems because it gains relatively little energy from each given quantity of this food?

- ○ The gazelle
- ○ The wildebeest
- ○ The zebra
- ○ The topi

7. Paragraph 2 suggests that which of the following is one of the most important factors in determining differences in feeding preferences of East African herbivores?

- ○ The availability of certain foods
- ○ The differences in stomach structure
- ○ The physical nature of vegetation in the environment
- ○ The ability to migrate when food supplies are low

8. According to paragraph 2, all of the following are true of East African gazelles EXCEPT:

- ○ They digest their food very quickly.
- ○ Microorganisms help them digest their food.
- ○ They are unable to digest large food particles unless these are chewed down considerably.
- ○ They survive well even if food supplies are not abundant.