

Question 1-11 are based on the following passage.

### Entomophagy: A Sustainable Solution

Traditional livestock rearing practices place heavy burdens on Earth's limited natural resources: animal waste contaminates water sources, creates acidic environments, and **1** polluting the air with greenhouse gases. Yet the world's livestock requirement is expected to double by the year 2050. **2** Some scientists and environmental advocates have such an alternative in mind: bugs. By embracing entomophagy (the consumption of insects as food), **3** the nutritional needs of people can continue to be met while also significantly reducing the ecological pressures resulting from traditional livestock rearing practices.

1

- A) NO CHANGE
- B) pollutes
- C) for polluting
- D) its pollution of

2

Which choice provides the most effective transition from the preceding sentence to the one that follows?

- A) 465 million tonnes of livestock products will be required to meet the demands of 9 billion people worldwide.
- B) This increase places heavy strains on food sources, like fish for instance, which has already seen a 3.6% increase in consumption since 1961.
- C) Traditional livestock may become an untenable protein source because of the heavy burdens placed on Earth's resources.
- D) It will be environmentally impossible to meet such a great demand without turning to alternative sources of protein.

3

- A) NO CHANGE
- B) the ecological pressures resulting from traditional livestock rearing practices will reduce while continuing to meet people's nutritional needs.
- C) people could significantly reduce the ecological pressures resulting from traditional livestock rearing practices while continuing to meet their nutritional needs.
- D) traditional livestock rearing practices will change, resulting in reduced ecological pressures, and humans can continue to meet their nutritional needs.

Insects can be reared as minilivestock in small, urban spaces and, in fact, **4** thrives in high-density, vertical environments. Thirty crickets can produce roughly 3,000 offspring in a six-by-six-by-two inch plastic storage container. **5** Those crickets yield about a pound of food. How much food they yield depends on the species. Rearing minilivestock in urban areas could significantly reduce the deforestation caused by the raising of traditional livestock.

**6** Insects have external skeletons, or exoskeletons, that support and protect their bodies. Because their exoskeletons seal in water, insects don't sweat and, consequently, don't need much water. 2,000 crickets, for example, require only one liter of water every five weeks, whereas traditional livestock consume 70 percent of the world's available fresh water. Insects also require far less feed than do **7** animals; they require: a \$15 mixture of cat-food, cereal, and powdered milk can feed thousands of bugs for two months. Insects can even consume organic waste, further reducing the expense and ecological resources needed to raise them. **8** Consequently, feeding one cow costs a farmer about \$70 to \$80 every two months.

4

- A) NO CHANGE
- B) thrive
- C) has thrived
- D) is thriving

5

Which choice most effectively combines the underlined sentences?

- A) Those crickets, depending on the species, yield about a pound of food.
- B) Those crickets yield about a pound of food, but, depending on the species of cricket, the amount they yield varies.
- C) About a pound of food is yielded by those crickets, but the amount yielded depends on the species of the crickets.
- D) The yield of those crickets is about a pound, but how much food those crickets yield depends on the species.

6

Which choice most effectively establishes the main topic of the paragraph?

- A) NO CHANGE
- B) Not only can insects thrive in small spaces but, as cold-blooded invertebrates with external skeletons, bugs use far fewer resources than do animals.
- C) When deciding which kind of livestock would make an economical investment, one must consider the cost of the feed for the livestock.
- D) Over 70 percent of Earth is covered in water, but less than one percent of that water is accessible for consumption.

7

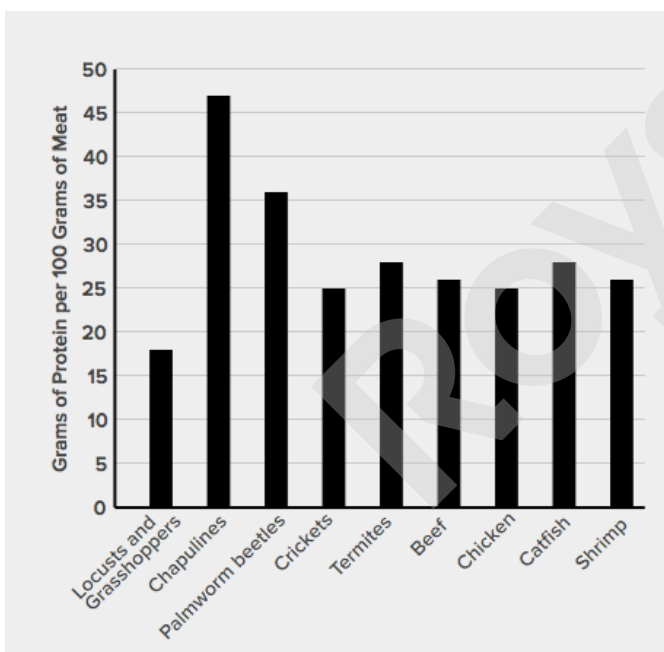
- A) NO CHANGE
- B) animals. They require:
- C) animals, requiring:
- D) animals:

8

- A) NO CHANGE
- B) Furthermore,
- C) In contrast,
- D) Similarly,

The environmental benefits of entomaphagy come at no expense to humans' health. **9** Moreover, the practice of eating insects can, in fact, offer some nutritional advantages. Vitamin B-12, for instance, which is essential for neurological functions, blood production, metabolism, and DNA **10** synthesis—is twice as plentiful in crickets as it is in beef. In light of these nutritional advantages, entomaphagy is worth serious consideration as a solution to the **11** originating livestock production crisis.

Comparison of Average Protein Content Among Insects, Reptiles, Fish, and Mammals (in Grams of Protein per 100 Grams of Meat)



Source: Data from Food and Agriculture Organization of the United States

9

The writer wants to include accurate and relevant information from the graph to support the main claim of the paragraph.

Which choice best accomplishes this goal?

- A) Locusts and grasshoppers provide humans with fewer than twenty grams of protein, whereas chicken provides around twenty-five grams of protein.
- B) Insects such as chapulines, plantworm beetles, crickets, and termites all offer amounts of protein comparable to those provided by traditional sources such as beef, chicken, and seafood.
- C) Whereas crustaceans such as shrimp contain an equal amount of protein to beef, Chapulines contain almost twice as much protein as beef.
- D) Traditional sources of protein, such as beef, chicken, and seafood, all provide humans with about twenty-five grams of protein.

10

- A) NO CHANGE
- B) synthesis,
- C) synthesis;
- D) synthesis

11

- A) NO CHANGE
- B) impending
- C) long-awaited
- D) impatient