Five Sample Reading Comprehension Questions and Explanations

<u>Directions</u>: Each set of questions in this section is based on a single passage or a pair of passages. The questions are to be answered on the basis of what is <u>stated</u> or <u>implied</u> in the passage or pair of passages. For some of the questions, more than one of the choices could conceivably answer the question. However, you are to choose the <u>best</u> answer; that is, the response that most accurately and completely answers the question, and blacken the corresponding space on your answer sheet.

Passage for Questions 1-5

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Until recently, many biologists believed that invertebrate "schools" were actually transient assemblages, brought together by wind, currents, waves, or common food sources. Jellyfish groupings, 5 for example, cannot be described as schools—cohesive social units whose members are evenly spaced and face the same way. However, recent research has found numerous cases in which crustaceans and other invertebrates form schools as fish do. Schooling 10 crustaceans such as krill regularly collect in such massive numbers that they provide abundant food for fish, seabirds, and whales.

Like schooling fish, invertebrates with sufficient mobility to school will swim in positions that are consistent relative to fellow school members, and are neither directly above nor directly below a neighbor. The internal structure of such a school changes little with external physical disruption but dramatically with the advent of a predator.

Since schooling is an active behavior, researchers assume that it must bring important benefits. True, schooling would appear to make animals more visible and attractive to predators. However, schooling leaves vast tracts of empty water, thereby reducing a predator's chances of picking up the school's trail. A large group maintains surveillance better than an individual can, and may discourage predation by appearing to be one massive animal. And although an attacking predator may eat some of the invertebrates, any individual school member has a good probability

of escaping.

In addition to conferring passive advantages, schooling permits the use of more active defense mechanisms. When a predator is sighted, the school 35 compacts, so that a predator's senses may be unable to resolve individuals, or so that the school can execute escape maneuvers, such as freezing to foil predators that hunt by detecting turbulence. If the predator attacks, the school may split, or may employ "flash 40 expansion"—an explosive acceleration of animals away from the school's center. When large predators threaten the entire school, the school may attempt to avoid detection altogether or to reduce the density of the school at the point of attack; when small predators 45 threaten the margins, school members may put on dazzling and confusing displays of synchronized swimming.

Schooling may also enable invertebrates to locate food—when one group member finds food, other

50 members observe its behavior and flock to the food source. On the other hand, competition within the school for food may be intense: some mysids circle around to the back of the school in order to eat food particles surreptitiously. Schooling can facilitate the

55 search for mates, but as a school's numbers rise, food may become locally scarce and females may produce smaller clutches of eggs, or adults may start to feed on the young. Thus, circumstances apparently dictate the optimal size of a school; if that size is exceeded, some

60 of the animals will join another school.

Question 1

Which one of the following best expresses the main idea of the passage?

- (A) The optimal size of a school of invertebrates is determined by many different circumstances, but primarily by issues of competition.
- (B) The internal structure of a group of invertebrates determines what defensive maneuvers that group can perform.
- (C) Although in many respects invertebrate schools behave in the same way that fish schools do, in some respects the two types of schools differ.
- (D) Certain invertebrates have been discovered to engage in schooling, a behavior that confers a number of benefits.
- (E) Invertebrate schooling is more directed toward avoiding or reducing predation than toward finding food sources.

Explanation for Question 1

The passage begins by making the point that an earlier view held by biologists—the view that no invertebrates form schools—has been abandoned in the face of evidence that there are numerous cases of invertebrates that do form schools. Evidence that these truly are cases of schooling is presented in the second paragraph. The first sentence of the third paragraph presents the central thesis of the passage, namely, that schooling brings benefits. The rest of the third paragraph focuses mainly on benefits that are enjoyed passively by the school, such as giving the appearance of a single large creature and thereby discouraging predation, while the fourth is concerned with the advantages enjoyed by a school in actively defending itself against predators. The final paragraph turns to potential survival advantages of schooling that are related to feeding and breeding, but it also discusses what may happen when a school gets too large for the available food supply.

(D) is the credited response because, as you can see from the synopsis, the passage begins by making the point that there are invertebrates that form schools. Most of the rest of the passage presents benefits that schooling invertebrates may derive from their schooling behavior. Choice (D) accurately captures both of these aspects of the main point.

Response (A) is incorrect. The passage strongly suggests that the optimal size of a school of invertebrates is determined by how much food is available. But the passage is not primarily concerned with analyzing what determines the optimal size of a school. The passage mentions the issue of optimal size only as part of its discussion of the survival benefits of schooling in the areas of feeding and breeding.

Response (B) is incorrect because the passage discusses defensive maneuvers only as part of its account of one of the benefits of schooling. Thus, how defensive maneuvers work provides evidence for one of the main ideas of the passage, but it is not itself the main focus of the passage. Moreover, (B) does not correctly describe what the passage says about defensive maneuvers. The passage does not relate specific defensive maneuvers to aspects of the internal structure of the school.

Response (C) is incorrect. The passage compares schooling invertebrates to schooling fish only to make the point that their schools have highly similar internal structures. The passage does not mention any dissimilarities between schools of fish and schools of invertebrates. So (C) is not correct.

Response (E) is incorrect. The passage mentions both protection from predation and finding food as benefits that schooling provides for invertebrates, but it does not discuss the issue of the relative importance of these two benefits. So (E) does not describe an idea that can be found in the passage.

This question is classified as "easy."

Question 2

Which one of the following best describes the final paragraph of the passage?

- (A) Arguments for opposing points of view are presented and then reconciled.
- (B) The disadvantages of certain types of choices are outlined and alternative choices are proposed.
- (C) Two different interpretations of a phenomenon are evaluated and one is endorsed as the more plausible.
- (D) The disadvantages of an action are enumerated and the validity of that action is called into question.
- (E) Advantages and disadvantages of a behavior are discussed and some actions for avoiding the adverse consequences are mentioned.

Explanation for Question 2

(E) is the correct answer. The final paragraph mentions two advantages of invertebrate schooling behavior, namely, that it enables invertebrates to find food and that it facilitates the search for mates. These advantages can lead to an increase in the size of the school. The downside is that the school can get too large for the local food supply, so that it faces starvation. The paragraph ends by pointing out reactions on the part of the school that have the effect of reducing its size, thereby eliminating the imbalance between population size and food supply. Thus (E) is the correct answer, since it mentions all three salient points: advantages of schooling, disadvantages of schooling, and responses by the school to avoid adverse consequences.

Response (A) is incorrect since the final paragraph is written from only one point of view: the point of view of someone trying to explain that invertebrate schooling behavior is, on balance, of benefit to the invertebrates. There is no mention in this paragraph, or anywhere else in the passage, of any opposing point of view on this matter.

Response (B) is not correct. The final paragraph describes a variety of behaviors on the part of schooling invertebrates. All of these behaviors are best described purely as reactions determined by environmental circumstances, and not as involving any element of choice. But even if one does, metaphorically, call these behaviors "choices," it is not accurate to say that the last paragraph proposes alternative choices.

Response (C) is not correct. It is not clear what it would mean to "interpret" a phenomenon like invertebrate schooling. But, in any case, no alternative interpretation is discussed or evaluated. So (C) fails to be correct for reasons similar to those for which (A) fails to be correct.

Response (D) is incorrect because the final paragraph does suggest that schooling can have the disadvantageous result of making a population too large for the available food supply. But the last paragraph does not question the claim that, overall, schooling is beneficial.

This question is classified as "moderately easy."

Question 3

According to the passage, jellyfish are an example of invertebrates that

- (A) do not engage in schooling behavior
- (B) form groups with evenly spaced members
- (C) assemble together only to feed
- (D) form schools only when circumstances are advantageous
- (E) collect in such large numbers as to provide abundant food

Explanation for Question 3

(A) is the correct answer. The passage says that jellyfish groupings—and this is the only mention of jellyfish in the passage—"cannot be described as schools" (line 5). Thus, jellyfish are an example of invertebrates that do not engage in schooling behavior.

Response (B) is incorrect. The passage denies that jellyfish groupings are schools (line 5), and immediately goes on to characterize schools as "cohesive social units whose members are evenly spaced." So, the passage presents jellyfish as examples of invertebrates that do not form groups with evenly spaced members.

Response (C) is not correct. The passage does not say that jellyfish are brought together in groups only by the availability of a common food source. The passage also explicitly mentions wind, currents, and waves as giving rise to such groups.

Response (D) is incorrect. As mentioned in the discussion of choice (A), the passage explicitly denies that jellyfish groupings are schools. Thus, since jellyfish do not form schools at all, they are not examples of invertebrates that form schools only when circumstances are advantageous.

Response (E) is incorrect since although the passage does describe krill as collecting in such massive numbers that they provide abundant food, it does not describe jellyfish this way. The passage neither comments on the size of jellyfish groupings nor on whether such groupings are a rich food source for predators.

This question is classified as "easy."

Question 4

It can be inferred from the passage that if cannibalism were occurring in a large school of crustaceans, an individual crustacean encountering the school would

- (A) try to stay at the edge of the school in order to obtain food
- (B) be more likely to be eaten if it were fully grown
- (C) be unlikely to join that particular school
- (D) try to follow at the back of the school in order to escape predators
- (E) try to confuse school members by executing complex swimming maneuvers

Explanation for Question 4

(C) is the correct answer. The passage makes it clear that the kind of cannibalism that can occur in a school of crustaceans—adults feeding on the young (lines 57–58)—is triggered by scarcity of food. A school that suffers from a shortage of food is not an attractive school for an unattached individual crustacean to join. In fact, such schools are so unattractive that some of their members leave and join other schools (lines 59–60). Thus, the passage provides support for (C).

Response (A) is not correct. According to the passage, cannibalism tends to occur in schools that suffer from a shortage of food. It is unlikely that there would be much food available at the edge of such a school. So it would be highly unlikely that an individual crustacean encountering such a school would attach itself to the edge of that school specifically in order to obtain food.

Response (B) is incorrect. Cannibalism in schools of crustaceans is specifically described as a matter of adults feeding on the young. So it would be reasonable to infer the opposite of (B), namely, that an individual crustacean would be less likely to be eaten if it were fully grown.

Response (D) is incorrect. As the discussion of the correct answer suggests, the most likely reaction on the part of an individual crustacean encountering a school that does not have enough to eat is to avoid that school. As shown by the fact that some members leave a school whose food supply is inadequate, the protection from predation that a school provides is less important than having enough to eat.

Response (E) is not correct since although the passage does mention complex swimming maneuvers executed by members of invertebrate schools, these swimming maneuvers are not presented as a means of confusing members of the school but rather as a means of baffling small predators. So the passage provides no grounds for inferring (E).

This question is classified as "moderately easy."

Question 5

Which one of the following, if true, would most clearly undermine the assumption about schooling mentioned in the first sentence of the third paragraph?

- (A) Observation reveals that many groups of invertebrates are unable to execute any defensive maneuvers.
- (B) Biologists find that some predators can always tell the difference between a school and a single large animal.
- (C) Research demonstrates that the less an invertebrate associates with others of its species, the better its chances of survival.
- (D) Biologists confirm that predators are more likely to notice a nearby school of invertebrates than to notice a single invertebrate.
- (E) Researchers determine that the optimal school sizes for numerous species have each declined in previous years.

Explanation for Question 5

(C) is the correct answer. The assumption mentioned in the first sentence of the third paragraph is that schooling, since it is an active behavior, must bring important benefits. The rest of the passage makes it clear that the important benefits provided by schooling are those that promote survival. But (C) implies that schooling diminishes an invertebrate's chances of survival. Hence, (C), if true, undermines the stated assumption.

Response (A) is not correct. If (A) said that many groups of schooling invertebrates are unable to execute any defensive maneuvers, then, if true, it would negate one of the benefits claimed for schooling by the passage and thus undermine the assumption to some degree, though perhaps not to the same degree as (C). But in fact (A) says only that many groups of invertebrates are unable to execute such maneuvers, and this does not undermine the assumption at all, since the invertebrates in question may all be of nonschooling varieties. (It is implicit in the first sentence of the second paragraph that some invertebrates lack sufficient mobility to school, and hence, presumably, to execute defensive maneuvers.)

Response (B) is not correct. One important benefit discussed in the passage is the benefit of protection from predation. One of the ways in which schools discourage predation is by appearing to be one massive animal. (B) says that there are some predators that would not be fooled in this way. But even if (B) is true, this mechanism might still discourage a majority of predators. Moreover, this is only one of the ways in which schooling provides protection against predators, and nothing in the passage suggests that it is necessarily even the most important one. So even if (B) is true, schooling would still bring the important benefit of helping to foil predators.

Response (D) is not correct. The passage essentially acknowledges that (D) is true (lines 21–23). However, it suggests that this drawback of schooling is outweighed by the fact that schooling reduces the chances of an encounter between the invertebrates in a school and a predator (lines 23–25).

Response (E) is not correct. The last paragraph indicates that the optimal size of a school depends mainly on the availability of food. So what choice (E) suggests most strongly is that in general there has been a decline in the richness of sources of food. But this does not mean that schools are not an efficient way of exploiting such sources of food as there are, or that they do not confer the other benefits claimed for them, such as protection from predators.

This question is classified as "moderately difficult."