The primary purpose of the passage is to

- A. discuss the assumptions and reasoning behind a theory.
- B. describe the aim, method, and results of an experiment.
- C. present and analyze conflicting data about a phenomenon.
- D. show the innovative nature of a procedure used in a study.

Choice B is the best answer. The first paragraph of the passage identifies and describes “Texas gourd vines” (line 1), but the primary focus of the passage is introduced in the first sentence of the second paragraph: “In one recent study, Nina Theis and Lynn Adler took on the specific problem of the Texas gourd—how to attract enough pollinators but not too many beetles” (lines 9-10). The remainder of the passage focuses on describing the purpose, process, and results of the recent research done on those Texas gourd vines.

Choice A is incorrect because the passage doesn’t focus on the assumptions behind a theory but rather on the way in which that theory was tested. Choice C is incorrect because the passage does not present much conflicting data; most of it supports the idea there can be too much fragrance for the Texas gourd vine. Choice D is incorrect because the passage explains the procedures used in a study were “very labor intensive” (line 31) but does not present them as particularly innovative. Question

Difficulty: Medium 64%

As presented in the passage, Theis and Adler’s research primarily relied on which type of evidence?

- A. Direct observation
- B. Historical data
- C. Expert testimony
- D. Random sampling

Choice A is the best answer. The passage says that to test their hypothesis, the scientists “planted 168 Texas gourd vines in an Iowa field” (line 18) and then ultimately walked “from flower to flower, observing each for two-minute intervals” (line 33). Because they gathered data by looking at and studying the plants...
in question, the scientists’ research is best characterized as relying on direct observation.

Choices B, C, and D are incorrect because line 33 make clear that the research emphasized direct observation, not historical data (choice B), expert testimony (choice C), or random sampling (choice D).

**Question Difficulty:** Easy 72%

Which statement about striped cucumber beetles can most reasonably be inferred from the passage?

- A. They feed primarily on Texas gourd plants.
- B. They are less attracted to dimethoxybenzene than honey bees are.
- C. They experience only minor negative effects as a result of carrying bacterial wilt disease.
- D. They are attracted to the same compound in Texas gourd scent that squash bees are.

Choice D is the best answer. The passage states that by using the smell of their nectar to lure pollinators like bees, Texas gourd vines are employing an "open communication network" that attracts "not just the good guys, but . . . also . . . the bad guys" (lines 4-6). Because cucumber beetles are then identified as some of “the very bad guys” (line 6) as far as the Texas gourd plant is concerned, it can be inferred that both the beetles and the bees are attracted to the same scent.

Choices A and C are incorrect because they are not supported by the text; the passage states that cucumber beetles “chew up pollen and petals” (lines 6-7) from the Texas gourd vines but not that those vines are their “primary” food source, and the passage does not address any effects, positive or negative, that cucumber beetles experience as a result of carrying bacterial wilt disease. Choice B is incorrect because the passage states that treating the Texas gourd vines with dimethoxybenzene led to “double the normal number of beetles” (line 35) but that pollinators like bees “did not prefer” (line 36) the treated flowers, which implies that cucumber beetles are not less attracted but more attracted to dimethoxybenzene than honey bees are. **Question Difficulty:** Medium 40%
The author indicates that it seems initially plausible that Texas gourd plants could attract more pollinators if they

- A. did not have aromatic flowers.
- B. targeted insects other than bees.
- C. increased their floral scent.
- D. emitted more varied fragrant compounds.

Choice C is the best answer. The author indicates that it is reasonable to think that the Texas gourd plants might lure more pollinators if their smell was stronger. This is clear from line 14, which states that “intuition suggests that more of that aroma should be even more appealing to bees.”

Choices A and D are incorrect because line 14 support the idea that it was initially thought that Texas gourd vines could lure more pollinators through “more of that aroma,” not by lacking an aroma (choice A) or giving off a more varied aroma (choice D). Choice B is incorrect because bees are the only pollinators specifically discussed in the passage, and there is no suggestion that targeting other insects would attract more bees. Question Difficulty: Medium 45%

As used in line 20, “treated” most nearly means

- A. altered.
- B. restored.
- C. provided.
- D. preserved.

Choice A is the best answer. The passage explains that as part of their research the scientists “made half the plants more fragrant by tucking dimethoxybenzene-treated swabs deep inside their flowers. Each treated flower emitted about 45 times more fragrance than a normal one” (lines 18-20). In this context, a flower that was “treated” would be one that was changed or altered.

Choices B, C, and D are incorrect because in the context of a flower having a compound like
dimethoxybenzene added to it, the word “treated” means changed or altered, not returned to normal (choice B), given (choice C), or kept for future use (choice D).

**Question Difficulty:** Medium 48%

What did Theis and Adler do as part of their study that most directly allowed Theis to reason that “bees were repelled not by the fragrance itself” (lines 37-38)?

- A. They observed the behavior of bees and beetles both before and after the flowers opened in the morning.
- B. They increased the presence of 1,4-dimethoxybenzene only during the August flowering season.
- C. They compared the gourds that developed from naturally pollinated flowers to the gourds that developed from hand-pollinated flowers.
- D. They gave bees a chance to choose between beetle-free enhanced flowers and beetle-free normal flowers.

Choice D is the best answer. In the passage Theis surmises that honey bees were likely repelled not by the enhanced fragrance of the dimethoxybenzene-treated flowers but “by the abundance of beetles” (line 38) found on them. She was able to make that assumption because the honey bees were able to choose between both normal flowers and fragrance-enhanced flowers without any beetles on them, because one of the parameters of the research was that “every half hour throughout the experiments, the team plucked all the beetles off of half the fragrance-enhanced flowers and half the control flowers, allowing bees to respond to the blossoms with and without interference by beetles” (lines 24-26).

Choice A is incorrect because the passage states only that the scientists observed the bees and beetles on the flowers as soon as they opened (lines 31-32), not both before and after they opened. Choice B is incorrect because although the passage does state that the experiment only took place during the “August flowering season” (line 18), it doesn’t state that this was a variable in the experiment or had any effect on it. Choice C is incorrect because comparing gourds based on the type of pollination is not related to the issue of what repelled bees from the fragrance-enhanced plants.

**Question Difficulty:** Medium 35%
Which choice provides the best evidence for the answer to the previous question?

- A. lines 24-26 ("So every . . . beetles")
- B. lines 27-28 ("Finally . . . beetles")
- C. lines 31-32 ("We would . . . open")
- D. lines 40-42 ("Gourds . . . flowers")

Choice A is the best answer. The previous question asks what Theis and Adler did to allow Theis to theorize that the bees were repelled not by the enhanced fragrance of certain flowers but by the excessive number of beetles on them, with the answer (they give the bees the chance to visit both normal and fragrance-enhanced flowers that did not have beetles on them) being supported in lines 24-26: “So every half hour throughout the experiments, the team plucked all the beetles off of half the fragrance-enhanced flowers and half the control flowers, allowing bees to respond to the blossoms with and without interference by beetles.”

Choices B, C, and D are incorrect because the lines cited do not support the answer to the previous question about what allowed Theis and Adler to theorize that the bees were repelled not by fragrance but by insects, instead highlighting a variable that didn't directly address the effect of fragrance on bees (choice B), describing the timing of one of the steps undertaken in the experiment (choice C), and discussing an aspect of gourd growth that was not related to the question of why bees may or may not have wanted to visit fragrance-enhanced flowers (choice D). Question Difficulty: Hard 42%

The primary function of the seventh and eighth paragraphs (lines 35-45) is to

- A. summarize Theis and Adler’s findings.
- B. describe Theis and Adler’s hypotheses.
- C. illustrate Theis and Adler’s methods.
- D. explain Theis and Adler’s reasoning.
Choice A is the best answer. The first six paragraphs (lines 1-8) of the passage introduce a plant (the Texas gourd vine) and its problem (luring enough insects to pollinate it but not too many of those that will harm it) and then describe a study undertaken to deal with “the specific problem of the Texas gourd—how to attract enough pollinators but not too many beetles” (lines 9-10). After the specifics of that experiment are described in detail, the results are explained and summarized in the seventh and eighth paragraphs (lines 35-39): “What they saw was double the normal number of beetles. . . . Squash bees were indifferent, and honey bees visited enhanced flowers less often. . . . That added up to less reproduction for fragrance-enhanced flowers” (lines 35-39).

Choice B is incorrect because Theis and Adler’s hypothesis (that more fragrance would make the flowers “even more appealing to bees,” line 14) is found in the third paragraph (lines 14-21). Choice C is incorrect because Theis and Adler’s methods are described in the third through sixth paragraphs (lines 14-21), not the seventh and eighth (lines 35-39). Choice D is incorrect because the seventh and eighth paragraphs detail the results in an experiment but do not focus on the researchers’ reasoning.

**Question Difficulty:** Easy 69%

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In describing squash bees as “indifferent” (line 36), the author most likely means that they

- A. could not distinguish enhanced flowers from normal flowers.
- B. visited enhanced flowers and normal flowers at an equal rate.
- C. largely preferred normal flowers to enhanced flowers.
- D. were as likely to visit beetle-infested enhanced flowers as to visit beetle-free enhanced flowers.

Choice B is the best answer. To be “indifferent” is to be apathetic, or without care or concern. In the context of an experiment that tested whether or not insects preferred normally scented flowers or ones with enhanced fragrance, describing the squash bees as “indifferent” implies they did not care about the scents and were equally drawn to both types of flowers.

Choice A is incorrect because “indifference” suggests the amount of concern one has about something but not anything to do with physical capabilities (such as being able to distinguish between the flowers). Choice C is incorrect because “indifference” suggests that one has no preference. Choice D is incorrect because the squash bees are said to be “indifferent” to certain flowers based on their fragrance, not on the number of beetles that may or may not be on them.

**Question Difficulty:** Medium 34%
According to the passage, Theis and Adler's research offers an answer to which of the following questions?

- A. How can Texas gourd plants increase the number of visits they receive from pollinators?
- B. Why is there an upper limit on the intensity of the aroma emitted by Texas gourd plants?
- C. Why does hand pollination rescue the fruit weight of beetle-infested Texas gourd plants?
- D. Why do Texas gourd plants stop producing fragrance attractive to pollinators when beetles are present?

Choice B is the best answer. Theis and Adler’s research clearly provided an answer to the question of why there is an upper limit on the intensity of the aroma emitted by Texas gourd plants, as their experiment was described as being able to “provide a reason that Texas gourd plants never evolved to produce a stronger scent” (lines 46-47).

Choice A is incorrect because Theis and Adler’s research was not able to show how to increase pollinator visits to the Texas gourd vine, as the results of their experiment showed that “pollinators, to their surprise, did not prefer the highly scented flowers” (line 36). Choice C is incorrect because Theis and Adler’s research was not able to explain how hand pollination rescued fruit weight, a finding the passage describes as “a hard-to-interpret result” (line 44). Choice D is incorrect because the passage never indicates that the flowers stop producing fragrance when beetles are present.

**Question Difficulty:** Hard 14%

Which choice provides the best evidence for the answer to the previous question?

- A. lines 9-10 (“In one . . . beetles”)
- B. lines 11-13 (“The aroma . . . 1,4-dimethoxybenzene”)
- C. lines 42-45 (“Hand . . . development”)
- D. lines 46-47 (“The new . . . scent”)
Choice D is the best answer. The previous question asks what question from among the answer choices Theis and Adler’s research was able to answer regarding Texas gourd vines. The answer (they determined why there was an upper limit to the amount of fragrance produced) is supported in lines 46-47: “The new results provide a reason that Texas gourd plants never evolved to produce a stronger scent.”

Choices A, B, and C are incorrect because the lines cited do not support the answer to the previous question about what Theis and Adler’s research revealed about Texas gourd vines, instead explaining the goal of the experiment undertaken (choice A), identifying some of the fragrance compounds found in the plant’s aroma (choice B), and describing results related to hand pollination rather than fragrance (choice C).

**Question Difficulty:** Hard 25%