토플 적중 90 READING DAY 12.

Pre-Study

1. 점수 쑥쑥 동의어

1. copious	
2. correspondingly	
3. counterpart	
4. cumbersome	
5. disband	
6. endorse	

awkward	support
dismiss	accordingly
plentiful	equivalent

2. 한 눈 쑥쑥 지문 정리

Act 4-2 The Purpose of Extrafloral Nectar

P1 Flowering plant의 nectar와 다른 목적 Extrafloral nectar : defense (attract insect to protect)

P2 일반 nectar 구성성분 & 목적 : to attract insect or conserve nectar

P3 EF nectar : flower와 다른 목적 = protection ex) ant, wasp…

P4 EF nectar & insect 관계에 대한 초기 오류 & Delpino 주장 (protect)

P5 Del지지 : Wheeler – ant 덕에 reproduction 할 수 있는 plant

P6 Ben연구 : ant protection → plant, reproduction 더 잘해

P7 EF nectar & insect : mutually beneficial 공생관계

Lecture Actual Test 04-2 The Purpose of Extrafloral Nectar

학습목표

- ◆ 지문을 미리 풀어보고, 정답 / 오답의 정확한 단서를 파악한다.
- ◆ 2. 특히, 오답률이 높은 문제를 철저히 분석한다. (5, 7, 8, 14)

1. Actual Test 04-2 The Purpose of Extrafloral Nectar

P1. Many flowering plants produce nectar as a way to attract insects that are beneficial to their life cycle. Most of them produce nectar from the sepal, ~~~. Any organism that wishes to feed on the nectar has to brush past the flower's reproductive structures, ~~~~. However, many plant species produce nectar on other parts of the plant in what are referred to as extrafloral nectaries, which clearly must serve another purpose. Most of the empirical evidence that has been gathered shows that extrafloral nectaries are a defensive mechanism that attracts insects to protect the plant. As a reward, the insects may freely feed upon the nectar provided.

1. According to paragraph 1, what is the primary function of extrafloral nectar?
   (A) It induces pollination.
   (B) It provides nutrients to insects.
   (C) It poisons organisms that feed on plants.
   (D) It serves as a defense mechanism.

P2. Nectar is a complex brew of many chemicals which are designed to attract and provide **sustenance** to other organisms. About 95% of all nectars is natural sugars, but many types contain amino acids.

2. The word **sustenance** in paragraph 2 is closest in meaning to
   (A) compensation
   (B) livelihood
   (C) endurance
   (D) nourishment

P2. However, other chemicals present in some nectars actually discourage the organism from taking a second sip. [For example, tobacco plants include some nicotine in their nectar, which is very bitter and less aromatic, meaning that the organism will eagerly feed once, but most likely move on soon afterward.]

핵심정보 1. tobacco nicotine in nec. (=bitter)
2. ➔ organism feed once ➔ move

3. Which of the sentences below best expresses the essential information in the highlighted sentence in the passage? Incorrect choices change the meaning in important ways or leave out essential information.

(A) Insects will move on to other tobacco plants after feeding on the nectar of one tobacco plant because it includes a certain amount of nicotine in its nectar.
(B) Because insects feeding on the nectar of tobacco plants find it bitter, they move on after only feeding once.
(C) Some insects are attracted to the nicotine present in tobacco plants because it is bitter and less aromatic, so they do not move on to other plants after feeding.
(D) Because the nicotine in the nectar of tobacco plants is poisonous, insects will only feed eagerly on the nectar once before moving on.

P2. Nectar is a complex brew of many chemicals which are designed to attract and provide sustenance to other organisms. About 95% of all nectars is natural sugars, but many types contain amino acids. In fact, all of the twenty amino acids that naturally occur in proteins have been found in various nectars. Many of the other compounds present in nectar are designed to attract specific organisms by their scent. These are often volatiles that carry long distances on breezes. However, other chemicals present in some nectars actually discourage the organism from taking a second sip. For example, tobacco plants include some nicotine in their nectar, which is very bitter and less aromatic, meaning that the organism will eagerly feed once, but most likely move on soon afterward. This allows the plant to **conserve** its nectar, which most plants reabsorb after fertilization to use in seed production.

4. The word **conserve** in paragraph 2 is closest in meaning to

(A) defend
(B) contain
(C) retain
(D) recycle

5. Based on paragraph 2, it can be inferred that

(A) the chemical composition of nectar is universal
(B) insects have a keen sense of smell
(C) nectars are primarily proteins
(D) plants stop producing nectar after fertilization

P3. Unlike flowers, extrafloral nectaries produce nectar continuously, regardless of whether the plant has reproduced. [This is due to the fact that **they** attract insects for an entirely different reason.]

6. The word **they** in paragraph 3 refers to
   (A) plants
   (B) flowers
   (C) volatiles
   (D) nectaries

P3. Unlike flowers, extrafloral nectaries produce nectar continuously, regardless of whether the plant has reproduced. This is due to the fact that 7-C they attract insects for an entirely different reason. Scientists have observed ladybird beetles, wasps, and particularly ants feeding on extrafloral nectar, and they all provide protection to the plant as well. Ladybird beetles are voracious predators that are very fond of eating aphids, which are a significant pest because they can reproduce asexually.
P3. Parasitic wasps will stun, remove, and lay eggs inside of caterpillars that consume leaves. Ants provide the most protection as they will attack and consume any insects that attack the plant and are also capable of discouraging larger herbivores from feeding on the plants.

7. All of the following are mentioned in paragraph 3 EXCEPT
   (A) ants can defend against animals much larger than them
   (B) aphids, which reproduce asexually, are a significant pest
   (C) the purpose of extrafloral nectaries is different from those in flowers
   (D) parasitic wasps provide protection against caterpillar eggs

P4. Although such relationships may seem obvious today, they were not always so well understood. Initially, many scientists thought that extrafloral nectaries were purely excretory organs, including Charles Darwin. In fact, his disagreement with Federico Delpino about this led the latter to engage in some of the first serious study of the phenomenon. Many experts at the time argued that the structures were actually hydathodes. Hydathodes are a type of specialized plant tissue that is very similar to stomata.

8. Why does the author mention Charles Darwin in paragraph 4?
   (A) To point out that even well-respected scientists have been misguided
   (B) To explain what triggered his research of extrafloral nectaries
   (C) To give an example of how nectaries have evolved over time
   (D) To introduce the scientist who first discovered extrafloral nectaries

P4. Although such relationships may seem obvious today, they were not always so well understood. Initially, many scientists thought that extrafloral nectaries were purely excretory organs, including Charles Darwin. In fact, his disagreement with Federico Delpino about this led the latter to engage in some of the first serious study of the phenomenon. Many experts ~~~~~. Delpino published a paper based on his observations in 1886 that **contended** that plants deliberately attract ants with this nectar to gain their protection.

9. The word **contended** in paragraph 4 is closest in meaning to
   (A) disputed
   (B) asserted
   (C) disproved
   (D) assuaged

P5. Delpino's work later received support from the research of entomologist William Morton Wheeler and botanist Barbara Bentley. Based upon his own observations, Wheeler proposed in 1910 that not only did the ants feed on the nectar, but that the plants were actually dependent upon the ants for their survival. He observed that plants that produced extrafloral nectar were almost entirely unable to reproduce without ants present and often died.

P6. In Bentley's experiment, she deliberately set out to determine whether plants genuinely benefited from ants and vice versa. She compared plants living in a carefully controlled environment free of ants to others in an environment that contained them. She found that after the plants had reproduced, there was a marked difference in the number of viable seeds that they produced. The plants that were exposed to ants produced an average of 215 seeds, whereas the plants in the controlled environment produced a mere 45. The ants protected the flowers throughout their stages of development, thereby providing the plants with a better opportunity to reproduce.

10. What is the function of paragraph 6 as it relates to paragraph 5?
   (A) To show similarities between the work of Wheeler and Bentley
   (B) To provide support for Delpino's work
   (C) To further illustrate what Bentley's experiment was about
   (D) To cast doubt on the validity of Bentley's experiment

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11. According to paragraph 6, Bentley conducted the experiment by
    (A) introducing different types of insects to each environment
    (B) delaying the stages of development of plants in one environment
    (C) controlling the number of plants in each environment
    (D) comparing plants in an ant-free environment to those in one with ants

P7. As the research by Wheeler and Bentley shows, these organisms depend upon each other for their survival. The ants provide the plants with much needed protection, while the plants provide the ants with an easily digestible energy source and protection against their predators. Most insects have parasitic relationships with plants, wherein the plants suffer for the insect's benefit. However, the relationships between extrafloral nectarine plants and their protectors appear to be wholly beneficial to both species. This means that they have evolved to share a mutualistic form of symbiosis. When this occurred or how long it took to happen remains unclear, but their interaction is clearly observable.

12. Based on paragraph 7, it can be inferred that
    (A) extrafloral nectaries are a product of evolution
    (B) a positive symbiotic relationship between insects and plants is rare
    (C) over time, the ants developed enzymes that could easily digest the amino acids present in nectar
    (D) more careful observation is needed to fully understand the relationship between extrafloral nectarine plants and their predators

13. Where would the sentence best fit?
    → Barbara Bentley conducted an experiment in 1977 that added further support to the theory.

P5. [■A] Delpino's work later received support from the research of entomologist William Morton Wheeler and botanist Barbara Bentley. [■B] Based upon his own observations, Wheeler proposed in 1910 that not only did the ants feed on the nectar, but that the plants were actually dependent upon the ants for their survival. [■C] He observed that plants that produced extrafloral nectar were almost entirely unable to reproduce without ants present and often died. [■D]

14. While nectar produced inside flowers attracts insects to help pollinate them, nectar produced on other parts of the plant attracts insects to protect the plant.

● ● ●

P2 nectar 구성성분 & 목적 : to attract insect or 유지
P3 EF nectar : flower와 다른 목적 = protection
P4 EF nectar & insect 관계에 대한 초기 오류 &Delpino 주장 (protect)
P5 Del지지:Wheel & Ben Wheel의 연구
P6 Ben연구 (ant protect)
P7 EF nec & insect: 공생

(A) Nectar, which is primarily composed of natural sugars, includes other chemical compounds that give off scents to attract insects.
(B) Both hydathodes and stomata are types of specialized plant tissues, but hydathodes secrete excess water while stomata regulate gas exchange.
(C) While many scientists mistakenly assumed that extrafloral nectaries were excretory organs, Delpino was right in his argument that extrafloral nectar attracts insects to gain their protection.
(D) Bentley's experiment, which showed that plants produced more seeds when ants were present, revealed the symbiotic relationship between insects and plants with extrafloral nectaries.
(E) In fact, plants exposed to ants produced an average of 215 seeds while those in an ant-free environment produced an average of 45 seeds.
(F) Insects such as parasitic wasps and ants feed on extrafloral nectar, consume pests which attack the plant, and deter larger herbivores from feeding on the plant.

Tip!

Problem : 추론 오답률 높아?

Solution :

1. 너무 깊이 생각하지는 않나?

<추론 유형>

(1) 뒤집기 : Before → after / A is ~er than B → B is not ~er than A
Unlike A, B did something → A did not something

(2) 꼬리물기 : A=B, B=C → A=C

(3) 일반화

2. 정답의 Key word가 반드시 본문에 존재해야 한다.

3. 정답 고르기 어려워? FACT 처럼 → 제거!