

13. Directions: An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. *This question is worth 2 points.*

Using species classifications is a human convenience.

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Answer Choices	
It is likely that the Central Valley salamanders were all descended from a common ancestor.	Despite the difficulties found in species classification, there is a need for it in science.
Although scientists may have a need to place animals into classes, nature is not always so easily categorized.	The Central Valley salamander and other "ring species" illustrate the difficulties in classifying animals.
Any two animals that can breed with each other are considered members of the same species.	One solution to the problem involves placing animals into subspecies, but this approach results in problems of its own.

Reading Practice Drill #6

Solutions to Spam

→ Although it seems like the proliferation of spam—junk E-mails sent unsolicited to millions of people each day—is a recent problem, spam has been around as long as the Internet has. In fact, the first documented case of spam occurred in 1978, when a computer company sent out 400 E-mails via the Arpanet, the precursor to the modern Internet. Now, spam E-mails account for more than two-thirds of all the E-mail sent over the Internet, and for some unlucky users, spam makes up 80 percent of the messages they receive. And, despite technological innovations such as spam filters and even new legislation designed to combat spam, the problem will not go away easily.

The reason spammers (the people and businesses that spread spam) are difficult to stop is that spam is so cost-effective. It costs a spammer roughly one-hundredth of a cent to send spam, which means that a spammer can still make a profit even with an abysmally low response rate, as low as one sale per 100,000 E-mails sent. This low rate gives spammers a tremendous incentive to continue sending out millions and millions of E-mails, even if the average person never purchases anything from them. With so much at stake, spammers have gone to great lengths to avoid or defeat spam blockers and filters.

Most spam filters rely on a fairly primitive "fingerprinting" system. In this system, a program analyzes several typical spam messages and identifies common features in them. Any arriving E-mails that match these features are deleted. But the fingerprinting defense proves quite easy for spammers to defeat. To confuse the program, a spammer simply has to include a series of random characters or numbers. These additions to the spam message change its "fingerprint" and thus allow the spam to escape detection. And when programmers modify the fingerprint software to look for random strings of letters, spammers respond by including nonrandom content, such as sports scores or stock prices, which again defeats the system.

→ A second possible solution takes advantage of a computer's limited learning abilities. So-called "smart filters" use complex algorithms, which allow them to recognize new versions of spam messages. These filters may be initially fooled by random characters or bogus content, but they soon learn to identify these features. Unfortunately, spammers have learned how to avoid these smart filters as well. **The smart filter functions by looking for words and phrases that are normally used in a spam message, but spammers have learned to hide words and phrases by using numbers or other characters to stand in for letters.** For example, the word "money" might appear with a zero replacing the letter "o." Alternatively, spammers send their messages in the form of a picture or graphic, which cannot be scanned in the same way a message can.

Another spam stopper uses a proof system. With this system, a user must first verify that he or she is a person before the E-mail is sent by solving a simple puzzle or answering a question. This system prevents automated spam systems from sending out mass E-mails since computers are often unable to pass the verification tests. With a proof system in place, spam no longer becomes cost-effective because each E-mail would have to be individually verified by a person before it could be sent. So far, spammers have been unable to defeat proof systems, but most E-mail users are reluctant to adopt these systems because they make sending E-mails inconvenient. ■ A similar problem prevents another effective spam blocker from widespread use. ■ This system involves charging a minimal fee for each E-mail sent. ■ The fee, set at one penny, would appear as an electronic check included with the

E-mail. ■ Users can choose to waive the fee if the E-mail is from a legitimate source; however, users can collect the fee from a spammer. A fee system would most likely eliminate a great deal of spam, but unfortunately many users find such a system too intrusive and inconvenient.

→ In some ways, the battles being fought over intrusive E-mails are very much an arms race. Computer engineers will continue to devise new and more sophisticated ways of blocking spam, while spammers will respond with innovations of their own. It is unfortunate that the casualties in this technological war will be average E-mail users.

1. The word proliferation most nearly means

- (A) addition
- (B) spread
- (C) diminishment
- (D) enlargement

2. In paragraph 1, the author describes spam as

- (A) a recent problem that affects millions of users
- (B) totaling more than 80 percent of E-mails sent via the Internet
- (C) a technological innovation
- (D) unwanted messages sent to a mass audience

Paragraph 1 is marked with an arrow [→]

3. In the passage, the word abysmally is closest in meaning to

- (A) unknowingly
- (B) disastrously
- (C) disappointingly
- (D) extremely

4. The phrase the program refers to

- (A) spam messages
- (B) random characters and numbers
- (C) a type of spam filter
- (D) common features

5. According to paragraph 4, smart filters are superior to fingerprinting systems because smart filters

- (A) are eventually able to recognize new versions of spam messages
- (B) are able to learn from their mistakes
- (C) do not need to find common features to detect spam
- (D) are not fooled by random characters or content

Paragraph 4 is marked with an arrow [→]

6. Which of the choices below best expresses the meaning of the boldfaced sentence in the passage? Incorrect answer choices change the meaning in important ways or leave out essential information.

- (A) Once spammers figured out how smart filters functioned, they were able to defeat them by changing words in the message.
- (B) Spammers can avoid smart filters by replacing certain letters in words or phrases with other characters.
- (C) Smart filters function by looking for words that have certain letters replaced by numbers.
- (D) A smart filter is easily defeated by spammers who are able to disguise words and phrases with numbers and characters.

7. The word automated as used in the passage most nearly means

- (A) computerized
- (B) automatic
- (C) costly
- (D) illegal

8. The passage mentions all of the following as hindrances to adopting verification systems EXCEPT

- (A) user reluctance
- (B) inconvenience
- (C) ineffectiveness
- (D) violation of privacy

9. The author describes the fight over spam as an arms race because

- (A) computer engineers and spammers are constantly reacting to each other's strategies.
- (B) some of the techniques used by spammers may cause harm to E-mail users.
- (C) there is no peaceful solution to the problem of spam.
- (D) computer engineers will never be able to completely protect against spam E-mails.

10. In paragraph 6, the author implies that

- (A) most spam E-mails will eventually be blocked.
- (B) E-mail users suffer the greatest costs from the fight over spam.
- (C) there is no way to stop new and more sophisticated spam E-mails.
- (D) the battle over spam E-mails will never end.

Paragraph 6 is marked with an arrow (→)

11. There are four black squares (■) in the passage, indicating where the following sentence could be added.

Although a fee to send an E-mail seems an extreme solution, the fee is more of a verification device than an actual payment.

Click on a square (■) to add the sentence to the passage.

12. Directions: Select the appropriate phrases from the answer choices and match them to the type of strategy to which they relate. TWO of the answer choices will NOT be used. This question is worth 4 points.

Answer Choices		Spammers
Take advantage of computer learning abilities	•	
Require a verification test to send E-mails	•	
Insert random characters and numbers into messages	•	
Develop a "fingerprint" of E-mail messages	•	
Benefit from the low cost of sending E-mail messages		Spam Blockers
Require users to include a small payment with each E-mail	•	
Rely on the convenience of E-mail	•	
Use automated systems	•	
Do not want to be inconvenienced when sending E-mails	•	