畿央大　2012年

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次の文章を読み，問い(A～E)に答えなさい。なお，\*のついた語(句)は下に注がある。

Pheromones are chemicals that animals, ( ア ) insects, produce. Plants also produce pheromones. Studies show that flowers use pheromones to attract bees. Pheromones play a very important role in the natural world. For many creatures, life would not be possible without pheromones.

\*Moths are one insect that could not survive without pheromones. Moths have poor eyesight, and most species cannot use sound to communicate. Instead, they communicate through pheromones. Female moths, for example, release pheromones from their legs and wings. A male moth can identify female moth pheromones from as many as five miles away. And because the pheromones don’t wear off for several hours, male moths have enough time to find the females and breed.

Ants have different pheromones for different purposes. Like moths, ants use pheromones to find each other. They also use pheromones to find food. When an ant finds food, it takes a piece and returns to the nest. Along the way, it releases a trail of pheromones. Other ants follow the trail to find the food. If something blocks the trail, the ants look for a new way to reach the food. When they find the shortest way, they produce a new trail of pheromones. In this way, pheromones help ants adapt to changes in their environment.

When an ant is hurt or threatened, it produces an “alarm” pheromone. Other ants identify the alarm pheromone and immediately come to help. The more serious the threat, the more alarm pheromones the ant produces. In this way, ants can quickly organize to fight insects hundreds of times their size.

Some species of ants use “trick” pheromones to stir up trouble and confuse their enemies. \*Fire ants, for example, produce pheromones near the nests of other ants. Those ants become confused and (1){① attacking ② begin ③ each other ④ fight ⑤ instead ⑥ of ⑦ to} the fire ants.

Other insects use trick pheromones to imitate another species. In some cases, this protects them from becoming the next course in another insect’s meal. An interesting example is the Large Blue butterfly. During its \*caterpillar stage, this unusual insect releases a pheromone similar to that of an ant. If ants find a Large Blue caterpillar in the forest, they carry it home. There, instead of eating it, they care for it ―― like a family member. The ants do not suspect that ( イ ) is wrong, even when the caterpillar starts to eat their young! The caterpillar doesn’t leave the nest until it has safely turned into a butterfly.

Because of examples like these, many biologists now believe that pheromones are the true language of insects. But pheromones are also important to plants and other animals. Their significance in the natural world is undeniable. Some scientists even believe that humans, like other living creatures, use pheromones to attract members of the opposite sex. If (2)that turns out to be true, it might be more accurate to talk about “Love at first smell” than “Love at first sight!”

(注) moth 「ガ」　　fire ant 「カミアリ」

caterpillar 「青虫(チョウ・ガの幼虫)」

A 文中の( ア )，( イ )に入れるのに最も適当な語(句)を次の①～④から一つ選び，番号で答えなさい。

( ア )

① include ② included ③ including ④ to include

( イ )

① anything ② everything ③ nothing ④ something

B mothについて本文の記述内容に最も合うものを次の①～④の中から一つ選び，番号で答えなさい。

① Moths are the only insects that could not survive without pheromones.

② Moths generally use sound to communicate with each other.

③ Female moths release pheromones, which do not wear off for several hours.

④ Male moths identify female moth pheromones by their legs and wings.

C 下線部(1)の{ }内の語(句)を意味が通るように並べ替えたとき，4番目にくる語(句)は①～⑦のうちどれか。番号で答えなさい。

D 下線部(2)の具体的内容として最も適当なものを，次の①～④の中から一つ選び，番号で答えなさい。

① that pheromones are the true language of insects

② that some scientists believe pheromones are important to plants and animals

③ that humans use pheromones to attract members of the opposite sex

④ that living creatures other than humans use pheromones to attract members of the opposite sex

E 本文の内容と合っているものを，次の①～⑧から三つ選び，番号で答えなさい。ただし，解答の順序は問わない。

① It is shown through studies that flowers attract bees by producing special kinds of pheromones.

② Moths have poor eyesight but have a splendid ability to catch smells and sounds.

③ Ants can detect pheromones released from food that is as far as five miles away.

④ Ants can know of a threat to a fellow ant by sensing its alarm pheromone.

⑤ When an ant produces the alarm pheromone, other ants gather so that they will look like a big insect.

⑥ Some insects produce pheromones in order to protect themselves from being eaten by other insects.

⑦ A caterpillar of the Large Blue butterfly does not eat young ants but cares for them.

⑧ A caterpillar of the Large Blue butterfly leaves the ants’ nest just before it turns into a butterfly.