

## Type 2 Biology

### Practice Set 5

*Questions 1–7* are about the following article.

We have known for a long time that flowers of different plants open and close at different times of day. This is so familiar that there seems to be no need to ask the reason for it. Yet no one really understands why flowers open and close at particular times. The process is not as simple as we might think, as recent experiments have shown. In one study, flowers were kept in constant darkness. We might expect that the flowers, without any information about the time of day, did not open as they normally do. In fact, they continued to open at their usual time. This suggests that they have some mysterious way of knowing the time. Their sense of time does not depend on information from the outside world; it is, so to speak, inside them, a kind of “inner clock”.

This discovery may not seem to be very important. However, it was later found that not just plants but also animals – including man – have this “inner clock” which controls the working of their bodies and influences their activities. Men, then, are also influenced by this mysterious power. Whether we wish it or not, it affects such things in our life as our need for sleep and our need for food.

In the past, this did not matter very much because people lived in natural conditions. In the modern world, things are different; now there are spacemen, airplane pilots and, in ordinary life, a lot of people who have to work at night. It would be very useful, then, to know more about the “inner clock”. Such ordinary things as flowers might help us understand more about ourselves.

1. A recent experiment showed that \_\_\_\_\_.  
(A) different flowers open and close at different times of day  
(B) for their opening and closing, flowers do not need information from the outside world  
(C) flowers are influenced by weak light even when they are in a dark room  
(D) flowers can be used for telling the time
2. In line 4, the word constant is closest in meaning to \_\_\_\_\_.  
(A) instant  
(B) continuous  
(C) frequent  
(D) extreme
3. According to the article, which of the following is true about the "inner clock"?  
(A) It is an unimportant discovery.  
(B) It is only found in animals.  
(C) It has not been understood so far.  
(D) It has effects on humans.
4. Further study of the "inner clock" will be useful because \_\_\_\_\_.  
(A) it might help us to understand ourselves in some way  
(B) we do not yet understand plants and animals well enough  
(C) the number of spacemen and airplane pilots is fast increasing  
(D) we should try to live more naturally than we do now
5. What can be inferred about the flowers if they are kept in constant darkness?  
(A) Flowers will not open or close as usual.  
(B) Flowers will not open any longer.  
(C) Flowers will open as they do in natural conditions.  
(D) Flowers will always remain in full blossom.
6. What have the mysterious power of knowing time without information from the outside world?  
(A) Animals including man as well as plants  
(B) All living things except man  
(C) Only flowers  
(D) Neither animals nor plants
7. In line 11, the word influences is closest in meaning to \_\_\_\_\_.  
(A) removes  
(B) changes  
(C) affects  
(D) transfers

**Questions 8–14** are about the following passage.

Butterflies are one of the most extensively studied insects – about 90 percent of the world's butterflies have scientific names. Butterflies also have a favorable image with the general public. Hence, they are an excellent group for communicating information on science issues such as diversity.

Perhaps the diversity of butterflies that has received the most attention over the past century is the striking difference in species richness between tropical and temperate regions. For example, in 1875 one biologist pointed out the diversity of butterflies in the Amazon. He mentioned that about 700 species were found within an hour's walk, while the total number found on the British islands did not exceed 66, and the whole of Europe had only 321. This early comparison of tropical and temperate butterfly richness has been well confirmed.

A general theory of diversity would have to predict not only this difference between temperate and tropical zones, but also patterns within each region, and how these patterns vary among different animal and plant groups. However, for butterflies, variation of species richness within temperate or tropical regions, rather than between them, is poorly understood. Indeed, unlike comparisons between temperate and tropical areas, comparisons of numbers of species among the Amazon basin, tropical Asia and Africa are still in the documentation phase.

8. What does the passage mainly discuss?
- (A) The physical characteristics of butterflies
  - (B) The names of butterflies
  - (C) The variety of butterflies
  - (D) Temperate and tropical regions
9. In line 1, the word extensively is closest in meaning to \_\_\_\_\_.  
(A) intensively  
(B) widely  
(C) traditionally  
(D) extremely
10. In line 6, the word striking is closest in meaning to \_\_\_\_\_.  
(A) physical  
(B) confusing  
(C) noticeable  
(D) successful
11. In line 9, the word exceed is closest in meaning to \_\_\_\_\_.  
(A) locate  
(B) allow  
(C) go beyond  
(D) come close to
12. In line 12, the phrase these patterns refers to \_\_\_\_\_.  
(A) patterns between temperate and tropical zones  
(B) patterns within each region  
(C) patterns among different animal and plant groups  
(D) patterns within tropical areas
13. Why does the author mention tropical Asia?
- (A) To point out that the behavior of butterflies varies with climate
  - (B) To explain that the diversity of butterflies is affected by human populations
  - (C) To give an example of a location where a general theory of butterfly diversity is still in the documentation phase
  - (D) To note a place where documenting plant species is more difficult than documenting butterfly species
14. Which of the following is NOT well understood by biologists?
- (A) European butterflies' habitats
  - (B) Variation of species richness between temperate and tropical regions
  - (C) Variation of species richness within temperate or tropical regions
  - (D) Comparisons of behavior patterns of butterflies and certain animal groups

**Questions 15–20** are about the following passage.

The elephant is an animal that lives in groups. An elephant herd usually has from twenty to forty members. The elephants in the herd depend on one another for help in time of trouble.

The leader of the group is usually a wise and strong female. She travels at the head of the herd and is followed by the other females and their young. The bull elephants follow last. When danger threatens, the bulls form a circle around the weaker animals and guard them.

The members of the herd are loyal to one another. A sick or wounded elephant is not left behind to die. If an elephant is sick, the whole herd stops traveling until it gets well. When an elephant is injured, two others walk on both sides of it and support it with their bodies. A member of the herd may be caught in a trap. Then the others try to free it.

Elephants are fond of the youngsters in the group and give them special care. They help the young ones stay afloat when the herd crosses a river. They work together to rescue a calf that has wandered into a dangerous place.

A female elephant that is about to give birth to her young leaves the herd for a short time. However, she takes another female along to act as “aunt”. The aunt stands guard and helps the mother with her newborn calf. In this way, the herd’s newest member is protected.

15. In line 1, the word herd is closest in meaning to \_\_\_\_\_.  
(A) leader  
(B) member  
(C) group  
(D) baby
16. What is usually the leader of an elephant herd?  
(A) A young bull elephant  
(B) An elephant couple  
(C) A wise and strong female  
(D) A strong bull and its assistant
17. When danger threatens, what would the bull elephants do to protect others?  
(A) They would be the leader of the group.  
(B) They would fight with other animals.  
(C) They would form a circle to protect them.  
(D) They would attack with their tusks.
18. Why does the author mention “a sick or wounded elephant”?  
(A) To prove that elephants of a herd are loyal to one another  
(B) To demonstrate that a sick or wounded elephant would be deserted  
(C) To explain that the elephant is not a strong and powerful animal  
(D) To give an example of how a leader elephant would help the members
19. In line 11, the word rescue is closest in meaning to \_\_\_\_\_.  
(A) hurt  
(B) save  
(C) carry  
(D) protect
20. In line 12, the word wandered is closest in meaning to \_\_\_\_\_.  
(A) walked  
(B) developed  
(C) sent  
(D) driven