토플 적중 90 READING DAY 04.

Pre-Study

1. 배경 지식 (Thermoregulation)

1. Endotherms : 내온성 동물 (=warm-blooded animals)

(1) birds and mammals

(2) 스스로 열 발생 (metabolic process)

(3) keep body temperature constant

(4) 열 손실 피하는 방법

- Shivering ➔ additional heat
- Fur, feather ➔ insulation
- Aquatic warm-blooded animals : blubber

Ectotherms : 외온성 동물 (=cold-blooded animals)

(1) fish, amphibians, reptiles

(2) Gain heat from the environment

(3) 주변 환경에 따라 체온 변화

(4) 온도 조절 방법

- basking in the sun to increase body temperature
- seeking shade to decrease body temperature

2. 한 눈 쏙쏙 지문 정리

Act 1-3 Thermoregulation in Marine Organisms

P1. 생명체의 Thermoregulation : Endotherms & Ectotherms (marine 동물)
P2. Marine 동물 중 둘 다 속하지 않는 경우 : body temp ↑ than water
P3. Truly Ectotherms가 아닌 marine동물 : body temp ↓ than 주변
P4. marine Endotherms 들의 체온 손실 원인들
P5. marine Endotherms 들의 체온 손실 방지 방법들 :
feather, fur, blubber, metabolism 가속화
P6. Whale & dolphin 체온 손실 방지방법 : 혈액 순환

Lecture Actual Test 01-3 Thermoregulation in Marine Organisms

학습목표

- ◆ 주어진 지문을 미리 풀어보고, 정답 / 오답의 단서를 정확히 파악한다.
- ◆ 특히, 오답률이 높은 문제를 철저히 분석한다.
  (2, 8, 11, 12, 13번)

1. Actual Test 01-3 Thermoregulation in Marine Organisms

Living organisms have a variety of ways in which they regulate their body temperature, but they are generally divided into two larger categories. Endothermic organisms are those whose metabolisms allow them to maintain a relatively stable temperature that is generally hotter than their ambient conditions. The key reason behind the difference in core body temperature between these organisms is the fact that water is much more conductive than air, and they lose more of their heat into their environment. The majority of marine creatures regulate their body temperature by matching that of their surroundings, which puts them in the second broad category of ectothermic organisms.

1. The word **sustained** in paragraph 2 is closest in meaning to

(A) continued
(B) intensive
(C) compulsory
(D) vigorous

2. According to paragraph 2, the rapidly swimming fish in the tuna family keep their body temperature higher than the water around them so they can

(A) supply energy to their red aerobic muscles
(B) generate heat at the core of their body
(C) increase their metabolism for prolonged activity
(D) swim deep into the ocean chasing prey

3. According to paragraph 3, why are some marine organisms not classified as truly ectothermic?
(A) They are found in intertidal areas.
(B) They have the ability to reflect or absorb solar energy.
(C) Their blood circulation system is different from that of ectothermic species.
(D) They maintain temperatures lower than their environment.

4. The word **considerable** in paragraph 4 is closest in meaning to
(A) eventual
(B) transient
(C) significant
(D) deviant

5. All of the following are mentioned in paragraph 4 as ways endothermic animals lose heat EXCEPT
(A) skin coming into contact with water
(B) absorbing solar energy close to the equator
(C) warm blood flowing to the extremities
(D) breathing in cold air

6. What is the function of paragraph 5 as it relates to paragraph 4?
(A) To explain ways marine mammals deal with the problems mentioned in paragraph 4
(B) To discuss how the problems described in paragraph 4 affect some animals more than others
(C) To provide examples of animals to which the problems mentioned in paragraph 4 do not apply
(D) To suggest possible causes of the problems mentioned in paragraph 4

7. The word **stationary** in paragraph 5 is closest in meaning to
(A) wedged
(B) nonmoving
(C) warm
(D) fixed

8. What is implied by comparing land mammals to marine mammals of similar size in paragraph 5?

(A) Relatively smaller-sized land mammals lose less heat than the relatively bigger sized marine mammals.

(B) Land mammals are more efficient at preventing heat loss than marine mammals.

(C) Land animals are exposed to significantly colder temperatures.

(D) There are other factors responsible for metabolic rate than body size.

9. 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) These limbs, which have a far greater surface area to inner volume ratio than other parts of the body, make the animals lose their body heat rapidly.

(B) The limbs have a greater surface area to inner volume ratio than the rest of the body, which makes it difficult for them to receive warm arterial blood.

(C) Their heat exchange system allows them to minimize heat loss through limbs which lose heat more quickly than other parts of the body due to their shape.

(D) Because their limbs have a greater surface area to inner volume ratio than other parts of the body, these animals have developed a system that prevents blood flow to the limbs.

10. According to paragraph 6, how do some marine mammals with limbs minimize heat loss?

(A) By placing veins closer to the core of the body

(B) By having the blood flowing back to the core colder than the blood flowing out

(C) By having veins carrying cold blood around the arteries carrying warm blood

(D) By cooling down warm blood in the veins before it reaches the core

P6. This system is not unique to mammals, as some fish species, like the aforementioned tuna and some sharks, possess **overall** similar systems to reduce heat loss through their fins and gills.

11. The word **overall** in paragraph 6 is closest in meaning to

(A) effective

(B) comprehensive

(C) satisfying

(D) general

12. Where would the sentence best fit?

→ The average body temperature of most land mammals tends to be around 40 degrees, but that of marine mammals is usually a few degrees lower.

P1. Living organisms have a variety of ways in which they regulate their body temperature, but they are generally divided into two larger categories. [A■] Endothermic organisms are those whose metabolisms allow them to maintain a relatively stable temperature that is generally hotter than their ambient conditions. [B■] The key reason behind the difference in core body temperature between these organisms is the fact that water is much more conductive than air, and they lose more of their heat into their environment. [C■] The majority of marine creatures regulate their body temperature by matching that of their surroundings, which puts them in the second broad category of ectothermic organisms. [D■]

13.

Organisms that maintain body temperatures higher than the ambient temperature are called endothermic, and organisms that match their body temperature to their surroundings are called ectothermic.

● ● ●

P2 2cateX: temp ↑than water but ↓ endo
P3 ecto 아닌 marine (BC: temp ↓ than 주변)
P4 marin endo.의 loss of heat
P5 heat loss 막는 방법
P6 whal & dolph: heat loss 많아 → heat exchange system

(A) Many do not fall into either category, as some keep their temperature between the two categories, while others keep their temperature even lower than the ectothermic group.
(B) The rapidly swimming fish in the tuna family have their swimming muscles concentrated just below their skin.
(C) Many endothermic organisms possess features such as fur coats and blubber to keep their body temperature high enough.

(D) For body parts with a greater surface area to inner volume ratio, they have developed a blood circulation system which prevents heat loss.

(E) Sea otters do not have blubber, but they have a thick coat of fur preventing their skin from coming into direct contact with water.

(F) The fact that intertidal organisms have lower temperatures than inanimate objects proves that land mammals have a lower metabolic rate than marine mammals.

Tip!

작가 의도 (Rhetorical Purpose)

1. Why does the author mention ~

The author mentions _____ in order to (by)

(1) 단락의 주제 주제의 key word → 정답

(2) 하이라이트 문장 → 하이라이트 앞/뒤 한 문장

2. What is the main (primary) purpose of paragraph X?

(1) 단락의 주제

3. What is the function of paragraph X as it related to paragraph Y?

(1) 각 단락의 주제 비교

Problem : 작가 의도 문제 많이 틀려?

Solution : (1) 단락의 주제를 제대로 파악하였는가?

(2) 의도를 알 수 있는 특정 단어를 제대로 해석하였는가?

(even, as~as, / initially, / on the contrary, ...)