5-01 · 5-1 진화의 논리
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2022년 6월 시행 · 한국교육과정평가원

The fossil record provides evidence of evolution. The story the fossils tell is one of change. Creatures existed in the past that are no longer with us. Sequential changes are found in many fossils showing the change of certain features over time from a common ancestor, as in the case of the horse. Apart from demonstrating that evolution did occur, the fossil record also provides tests of the predictions made from evolutionary theory. For example, the theory predicts that single-celled organisms evolved before multicelled organisms. The fossil record supports this prediction—multicelled organisms are found in layers of earth millions of years after the first appearance of single-celled organisms. Note that the possibility always remains that the opposite could be found. If multicelled organisms were indeed found to have evolved before single-celled organisms, then the theory of evolution would be rejected. A good scientific theory _____. The fact that we have not found such a case in countless examinations of the fossil record strengthens the case for evolutionary theory.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① never changes its basic predictions
② avoids making testable predictions
③ always allows for the possibility of rejection
④ depends only on the fossil record
⑤ explains every possible observation

2. 요지 윗글의 요지로 가장 적절한 것은?

① 화석 기록은 진화가 일어났음을 보여 줄 뿐 아니라 반증 가능한 예측을 검증하여 진화론을 뒷받침한다.
② 화석 기록은 진화론과 모순되는 사례를 많이 보여 준다.
③ 다세포 생물은 단세포 생물보다 먼저 출현했다.
④ 과학 이론은 반증될 수 없어야 신뢰할 수 있다.
⑤ 말의 화석은 공통 조상이 없음을 보여 준다.

2024학년도 수능 39번

2023년 11월 시행 · 대학수학능력시험

Misprints in a book or in any written message usually have a ① negative impact on the content, sometimes (literally) fatally. The displacement of a comma, for instance, may be a matter of life and death. Similarly most mutations have ② harmful consequences for the organism in which they occur, meaning that they reduce its reproductive fitness. Occasionally, however, a mutation may occur that ③ increases the fitness of the organism, just as an accidental failure to reproduce the text of the first edition might provide more accurate or updated information. At the next step in the argument, however, the analogy ④ breaks down. A favorable mutation is going to be more heavily represented in the next generation, since the organism in which it occurred will have more offspring and mutations are transmitted to the offspring. By contrast, there is no mechanism by which a book that accidentally corrects the mistakes of the first edition will tend to sell ⑤ worse.

1. 어휘 윗글의 밑줄 친 부분 중, 문맥상 낱말의 쓰임이 적절하지 않은 것은?

① ② ③ ④ ⑤

2. 주제 윗글의 주제로 가장 적절한 것은?

① why most books contain serious misprints
② how mutations are copied in printed texts
③ the commercial success of second editions
④ where the analogy between misprints and mutations fails
⑤ the danger of commas in legal documents

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2023년 6월 시행 · 한국교육과정평가원

The evolutionary process works on the genetic variation that is available. It follows that natural selection is unlikely to lead to the evolution of perfect, 'maximally fit' individuals. Rather, organisms come to match their environments by being '_____' or 'the fittest yet': they are not 'the best imaginable'. Part of the lack of fit arises because the present properties of an organism have not all originated in an environment similar in every respect to the one in which it now lives. Over the course of its evolutionary history, an organism's remote ancestors may have evolved a set of characteristics—evolutionary 'baggage'—that subsequently constrain future evolution. For many millions of years, the evolution of vertebrates has been limited to what can be achieved by organisms with a vertebral column. Moreover, much of what we now see as precise matches between an organism and its environment may equally be seen as constraints: koala bears live successfully on Eucalyptus foliage, but, from another perspective, koala bears cannot live without Eucalyptus foliage.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① the best imaginable
② the fittest available
③ perfectly designed
④ free from all constraints
⑤ maximally fit

2. 제목 윗글의 제목으로 가장 적절한 것은?

① Koalas: Perfectly Designed for Every Forest
② How Evolution Creates Ideal Organisms
③ The Vertebral Column: Evolution's Greatest Mistake
④ Why Environments Never Change
⑤ Not Perfect, Just the Fittest Yet: The Limits of Natural Selection

2023학년도 수능 36번

2022년 11월 시행 · 대학수학능력시험

A fascinating species of water flea exhibits a kind of ① flexibility that evolutionary biologists call adaptive plasticity. If the baby water flea is developing into an adult in water that includes the chemical signatures of creatures that prey on water fleas, it develops a helmet and spines to defend itself against predators. If the water around it doesn't include the chemical signatures of predators, the water flea doesn't develop these protective devices. That's a clever trick, because producing spines and a helmet is ② costly, in terms of energy, and conserving energy is ③ essential for an organism's ability to survive and reproduce. The water flea ④ only expends the energy needed to produce spines and a helmet when it needs to. So it may well be that this plasticity is an adaptation: a trait that came to exist in a species because it contributed to reproductive fitness. There are many cases, across many species, of adaptive plasticity. Plasticity is conducive to fitness if there is ⑤ insufficient variation in the environment.

1. 어휘 윗글의 밑줄 친 부분 중, 문맥상 낱말의 쓰임이 적절하지 않은 것은?

① ② ③ ④ ⑤

2. 제목 윗글의 제목으로 가장 적절한 것은?

① Why Water Fleas Always Grow Spines
② Helmets on Demand: Adaptive Plasticity in Water Fleas
③ The Hidden Dangers of Clean Water
④ Predators That Change Their Shape
⑤ Saving Energy by Avoiding Reproduction

2026년 5월 고3 학평 23번

2026년 5월 시행 · 전국연합학력평가

The gene-centric view separates the organism from its environment, and in large part, removes agency from the organism. The ‘environment’ becomes a box within which ‘gene-motivated’ organisms behave. Thus, it misleadingly partitions ‘genetic’ from ‘environmental’ causes, giving primacy to the former. Therefore, altruism is denied because ‘in reality’ organisms behave to enhance their genes in the ‘gene pool’—and love, hate, desires and other motivations flow through and from genes. With this there can be no creativity. The organism is _____. This is evidently nonsense because, if there is a prisoner, it must be the genes, locked in the organism and obeying its will. It is the organism as a self-organising entity that has motivation and uses genes in its capacity to act. The word ‘organism’ has its origins in defining organisms as self-organising beings, going back at least to Immanuel Kant’s 1790 Critique of Judgment. The gene-centric view strips the organism of its definitive self.

1. 빈칸 추론 윗글의 빈칸에 들어갈 말로 가장 적절한 것은?

① the master of its environment
② free from genetic influence
③ a product of pure chance
④ a prisoner of its genes
⑤ independent of other organisms

2. 주장 윗글에서 필자가 주장하는 바로 가장 적절한 것은?

① 생물의 모든 행동은 유전자의 이익을 위해 일어난다.
② 이타적 행동은 진화적으로 설명할 수 없다.
③ 생물은 유전자의 죄수가 아니라 스스로를 조직하며 유전자를 사용하는 주체로 보아야 한다.
④ 유전적 원인과 환경적 원인은 엄격히 나누어야 한다.
⑤ 칸트의 생물학은 현대 유전학과 맞지 않는다.

정답 및 해설

5-01 **1.**③ **2.**① · 5-02 **1.**⑤ **2.**④ · 5-03 **1.**② **2.**⑤ · 5-04 **1.**⑤ **2.**② · 5-05 **1.**④ **2.**③

5-01 · 2023학년도 6월 모평 36번

1. ③ 진화론은 단세포 생물보다 다세포 생물이 먼저 발견되면 기각될 수 있다. 이처럼 좋은 과학 이론은 늘 반증될 가능성을 열어 둔다.

2. ① 화석 기록이 진화론의 예측(단세포 → 다세포)을 시험하고, 반례가 발견되지 않았다는 사실이 이론을 강화한다는 것이 요지다.

5-02 · 2024학년도 수능 39번

1. ⑤ 우연히 오류를 바로잡은 책이 '더 잘 팔리게' 될 메커니즘은 없다는 것이 유리한 돌연변이가 다음 세대에 더 많이 퍼지는 것과의 대조다. ⑤ worse → better.

2. ④ 오자와 돌연변이는 대부분 해롭다는 점에서 비슷하지만, 유리한 변이가 다음 세대로 퍼지는 메커니즘에서 비유가 무너진다는 내용이다.

5-03 · 2024학년도 6월 모평 40번

1. ② 자연선택은 가용한 유전적 변이에 작용하므로 생물은 '상상할 수 있는 최선'이 아니라 '지금 가능한 가장 적합한' 상태에 이를 뿐이다. ①·⑤는 글이 부정한 표현이다.

2. ⑤ 자연선택은 완벽한 개체가 아니라 진화의 '짐'에 제약된 '지금까지의 최적'을 만들 뿐이라는 글이다.

5-04 · 2023학년도 수능 36번

1. ⑤ 환경에 충분한 변화가 있을 때 가소성이 적합도에 도움이 된다. 환경이 늘 같다면 상황에 따라 달라질 필요가 없다. ⑤ insufficient → sufficient.

2. ② 물벼룩은 포식자의 화학 신호가 있을 때만 투구와 가시를 만들어 에너지를 아끼며, 이런 적응적 가소성은 적합도에 기여한다는 글이다. ①은 글과 반대다.

5-05 · 2026년 5월 고3 학평 23번

1. ④ 유전자 중심 관점에서는 생물이 유전자의 명령을 따를 뿐이므로 창의성이 없고 유전자의 '죄수'가 된다. 필자는 바로 다음 문장에서 이를 반박한다.

2. ③ 유전자 중심 관점을 비판하며, 생물은 자기 조직적 존재로서 동기를 갖고 유전자를 이용한다고 주장한다.