

RIPPLE ENGLISH

ACTIVE LEARNING PROGRAM

Workbook for:
“Darwinism on Everything”

問題は解きっぱなしにしないで！

英語資格試験の学習は、**解いた後の復習をしなければほとんど効果はありません。**

答え合わせをしておしまいせず、**テキストの音読練習やリスニング、多読学習などのインプット学習を何度も反復して記憶に定着させましょう。**ホームページからダウンロードできる音読練習用のテキストをぜひご活用ください。

また、数日置いてから再度解き直すのも効果的です。答えを記憶してしまっているかもしれませんが、**回答の根拠をなぞりながら繰り返し解くことで有効な復習になります！**



Darwinism on Everything

1. In November 1859, a British biologist Charles Darwin published “On the Origin of Species”, which proposed that species evolve over time through random mutations and natural selection without any plan or designer in charge. He knew that his theory would face harsh criticism because the idea **challenged** traditional views about the origin and diversity of life presented by Christianity. At the time, most people believed that all creatures, including human beings, were created by God, so any idea that existence does not require God to be explained provoked strong opposition. So he had been extremely careful to bring his idea to the public. He kept his theory secret for 17 years, while working hard to establish his reputation as a great scientist.
2. **However, Darwin himself might have underestimated the potential impact of his theory.** To generalize, the essence of Darwinian evolution is that beautiful and intricate systems can be made without anybody knowing how to make them. Evolution does not have to be only about living organisms. This theory can potentially provide explanation to all of human culture; from morality to technology, from the economy to religion. How does evolution explain the development of human society?

- (1) According to paragraph 1, Charles Darwin kept his theory secret because
 - A. he was partly skeptical of his own theory.
 - B. he was not atheistic enough to disregard God.
 - C. he struggled with his religious faith.
 - D. he expected strong disagreement from the public.
- (2) The word “challenge” in the passage is closest in meaning to
 - A. try
 - B. dispute
 - C. criticize
 - D. risk
- (3) Which of the following text best expresses the essential information in the highlighted sentence?

However, Darwin himself might have underestimated the potential impact of his theory.

 - A. Darwin's theory has very little impact on society, contrary to his expectation.
 - B. Darwin's theory not only applies to animals but all living organisms.
 - C. Darwin’s theory can be applied more generally than he expected.
 - D. Darwin's theory is limited to explaining morality.

3. Human body is a collection of 40 trillion cells that work collaboratively and autonomously without any master cell that directs and controls the function of all the cells. What is equally remarkable is that this sophisticated system has evolved from the simple structure of single-celled organisms without any top-down designer or planner. It is a gradual, incremental, and bottom-up process.
 4. Similarly, the global economy today is working in a bottom-up, decentralized way. Billions of consumers and millions of companies are making trillions of decisions everyday, but there is no one in command. No central direction is required to tell the economy how many slices of bread, cups of coffee or laptops are needed. Free market works by distributing information and power to make decisions among individuals because even the best and brightest mind can never process such huge data. Indeed, when somebody tries to make central directions, the result is often a miserable mess, such as the socialist economy of the Soviet Union. Whether it is the structure of living organisms or social structures, distributed systems work better than centralized systems.
 5. Furthermore, the intricacy of the global economy today has evolved from simple and basic exchanges in hunter-gatherer era. Early hunter-gatherers recognized the advantages of exchange and division of labor, which led individuals to engage in more specialized roles and communities to expand the scale of trading networks. The global economy in the 21st Century is the result of this spontaneous and accumulated process. Much like biological evolution, nobody has ever planned or directed this thousands of years of economic progress.
- (4) According to paragraph 3, which of the following is NOT true?
 - A. Numerous cells in human body work together without any centralized leadership.
 - B. The complexity of human body has been created overnight through a bottom-up process.
 - C. Evolution of living organisms doesn't require top-down direction.
 - D. Both the function and evolution of living organism lack designer in charge.
 - (5) According to paragraph 4, the defining difference between free market economy and socialist economy is about;
 - A. how to process information.
 - B. how many people are involved in centralized decision making.
 - C. how they understand the origin and diversity of living organisms.
 - D. how bright the top leaders are.
 - (6) According to paragraph 5, which of the following is true?
 - A. Some smart hunter-gatherers who recognized the benefit of trade and exchange led the expansion of economic activities.
 - B. Each individual at each era have made small steps towards global and complex economy.
 - C. Biological evolution has driven the progress of human economy.
 - D. Exchange and division of labor are the beginning of economic disparity.

6. We humans are unique animals in that we can treat strangers with sincerity and fairness. This moral sense was not created top down by God or philosophers, but rather evolved spontaneously to fit the environment. It is probably trade and exchange that significantly drove the evolution of morality. In market societies, if you get a reputation for unfairness or violence, people will not deal with you, and you will lose in the long run. Trading with neighboring communities is more beneficial than killing them, so people increasingly began to think of neighbors as potential trade partners rather than potential prey. Commerce led people to value the opportunity to be trusted by a stranger. The point is that this change was not directed by some moral leader or god. Rather, daily interactions among ordinary people gradually changed the common views in society, and religious leaders just reflected the bottom-up decision back to us.
7. Morality is evolving even today. In the face of global issues such as climate change, pandemic diseases and financial crises, a growing number of individuals are adopting the perspective of considering the entire human race as a unified community, displacing intolerant nationalism. With increasing popularity of social media, humanity is now facing a new environment where we interact electronically with anonymous individuals, whose faces and backgrounds remain unknown. Since we Homo Sapiens are still unfamiliar with this new style of communication, we are struggling to update our moral codes. On Twitter, for example, we see people both slandering strangers and criticizing those slanders, which can be seen as a process of calibrating our morality to fit the newly invented way of interaction.

- (7) According to paragraph 6, what significantly drove the evolution of morality?
- A. The influence of religious leaders.
 - B. Laws and regulations imposed by authorities.
 - C. Trade and exchange in market societies.
 - D. Philosophical teachings and principles.
- (8) According to paragraph 7, what is the impact of social media on human interaction?
- A. It has made human interaction more personal and intimate.
 - B. It has eliminated the need for face-to-face communication.
 - C. It has created a new environment of anonymous digital interaction.
 - D. It has reduced the importance of moral codes in society.

8. The light bulb is often used as a metaphor for invention. It is indeed one of the greatest inventions in human history. It brought cheap light for billions of people and lessened the chances of fire. We love to read the story of how Thomas Edison finally invented it through trial and error. We give him credit for changing our lives. Suppose Thomas Edison hadn't been born, would history have been different? Of course not. Somebody else would have come up with the idea of a light bulb. In fact there were 23 people who deserve the credit for inventing some version of electric light in the same decade. The light bulb was just **ripe** to be invented in the 1870s for the following two reasons.
9. **First, technology proceeds, like evolution, to the adjacent possible.** Each invention is necessary for the next invention. Prior to the invention of the light bulb, there were significant advancements in power generation technology and distribution systems, resulting in the development of infrastructure to deliver electricity to ordinary households. Second, inventions are fueled by demand. Due to industrialization and urbanization in the 1870s, population density increased in cities and more people stayed up late at night. Naturally they wanted safe and convenient lighting free from the smoke and fire risk. In short, there was a technical background and growing demand for inventing the light bulb. It had to be invented in the 1870s and it didn't really matter who invented it.
10. The same is true for other inventions. For instance, search engines like Google were ripe for discovery in the 1990s when the Internet became popular and the number of websites skyrocketed. People wanted something that helped them get to the page they were looking for. By the time Google came along in 1996, there were already many other search engines and Google was just among one of them. Once the necessary conditions are met, new technologies will emerge to their own rhythm, in the places and at the times most suited to them.

- (9) The word "ripe" in the passage is closest in meaning to
- A. mature
 - B. sweet
 - C. ready
 - D. funded

- (10) Which of the following text best expresses the essential information in the highlighted sentence?

First, technology proceeds, like evolution, to the adjacent possible.

- A. Technological development is influenced by adjacent societies.
 - B. Technological development is accelerated by competition between neighboring communities.
 - C. Technological development is only possible when it is prompted by the environment.
 - D. Technological development has to be step-by-step.
- (11) According to paragraph 9, what factors contributed to the invention of the light bulb in the 1870s?
- A. The desire for decorative lighting in households.
 - B. The existence of great inventors like Edison.
 - C. The need for a safe, smoke-free lighting solution.
 - D. The absence of fire hazards in urban areas.
- (12) According to paragraph 10, many search engines like Google appeared because
- A. Google stimulated other entrepreneurs and engineers.
 - B. People wanted something that helped them open their own websites.
 - C. There was a growing demand for search engines.
 - D. Google's success encouraged inventors around the world.

11. Dolphins and salmon have a similar body shape despite taking different evolutionary paths. They have independently acquired the streamlined shape in adaptation to an underwater environment. This phenomenon is called convergent evolution; the appearance of the same solution to a particular problem in widely different places. When organisms are faced with similar environmental conditions and similar challenges, they tend to develop similar solutions.
12. This is also the case in the development of human culture and technology. We know that Edison was not the only inventor of the light bulb in the 1870s. Almost all discoveries, not just the light bulb, occurred from different people simultaneously; there were six different inventors of the thermometer, four of vaccination, five of the electric telegraph, and six of the electric railroad. Culture and technology develop inevitably in adaptation to the social condition and needs by combining and refining the existing ideas. The way we learn human history can therefore mislead, because it places far too much emphasis on design, direction and planning, and far too little on coincidence, environmental conditions, and dynamics of society. We were taught that artists create genres, inventors make breakthroughs, and philosophers change minds. Individuals can make a difference, of course, and so can big companies and institutions. Leadership still matters. But the truth is that artists can create genres when they are prompted by social changes, inventors can make breakthroughs when new technologies are ripe to appear, and philosophers can change minds when ordinary people are ready to accept new ideas.
13. It is the sea that shaped dolphins and salmon. The shape of marine animals are not designed top down by God, but rather emerged spontaneously through adaptation to the environment. Similarly, **the shape of ships is not determined by human shipbuilders, but rather by the sea itself.** Some ships sail successfully and their designs are inherited, while others are shattered by waves and never be copied. It is the sea that determines which ships succeed or fail and which characteristics are passed on.

(13) According to paragraph 11, dolphins and salmon have a similar body shape because

- A. they share a similar problem.
- B. they were designed by a higher power.
- C. they share a common ancestor.
- D. they are closely related species.

(14) Which of the following best express the essence of the paragraph 12?

- A. Culture and technology develop through the combined efforts of individuals, companies, and institutions, with leadership playing a significant role.
- B. The development of culture and technology is primarily driven by individual inventors and philosophers who make breakthroughs and change minds.
- C. The evolution of culture and technology is guided by a predetermined design and planning, with artists, inventors, and philosophers leading the way.
- D. Culture and technology develop through a combination of coincidences, social conditions, and the readiness of ordinary people to accept new ideas.

(15) Which of the following text best expresses the essential information in the highlighted sentence?

The shape of ships is not determined by human shipbuilders, but rather by the sea itself.

- A. Engineering ships is also an adaptation problem to the environment.
- B. Ships are designed by sea deity.
- C. Humans are helpless against natural threats.
- D. Shipbuilders have to obey the wishes of authority figures.

Answers

- (1) D
- (2) B
- (3) C
- (4) B
- (5) A
- (6) B
- (7) C
- (8) C
- (9) C
- (10) D
- (11) C
- (12) C
- (13) A
- (14) D
- (15) A

(1) 1段落によると、ダーウィンが理論を秘匿していた理由は

- A. he was partly skeptical of his own theory. (彼自身もその理論について半信半疑だったから)
- B. he was not atheistic enough to disregard God. (神を無視するほど無神論的ではなかったから)
- C. he struggled with his religious faith. (自分自身の信心と葛藤したから)

D. he expected strong disagreement from the public. (世間からの強い反発を予想したから)

(2) 文中の“challenge”と意味がもっとも近いのは

- A. try (挑戦する)
- B. dispute** (異を唱える)
- C. criticize (批判する)
- D. risk (危険にさらす)

(3) 下線部のエッセンスをもっともよく表しているのは？

However, Darwin himself might have underestimated the potential impact of his theory.

- A. Darwin's theory has very little impact on society, contrary to his expectation. (ダーウィンの理論は彼の予想に反して社会に大きなインパクトは与えなかった)
- B. Darwin's theory not only applies to animals but all living organisms. (ダーウィンの理論は動物だけでなくすべての生物に当てはまる)
- C. Darwin's theory can be applied more generally than he expected.** (ダーウィンの理論は彼が予想した以上に広い範囲に当てはまり得る)
- D. Darwin's theory is limited to explaining morality. (ダーウィンの理論は道徳観の説明に限定される)

(4) 3段落の内容と合致しないのは？

- A. Numerous cells in human body work together without any centralized leadership. (人体の多数の細胞は中央集権的なリーダーシップなしに協同している)
- B. The complexity of human body has been created overnight through a bottom-up process.** (人体の複雑さはボトムアップの過程でまたたく間に創られた)
- C. Evolution of living organisms doesn't require top-down direction. (生物の進化はトップダウンの指令を必要としない)

D. Both the function and evolution of living organism lack designer in charge. (生物の機能にも進化にも担当設計者は存在しない)

B: ボトムアップである点は正しいが、「overnight(またたく間に)」が誤り。本文では、gradual, incrementalな(徐々に進行する累積的な)プロセスであると説明されている。

(5) 4段落によると、自由市場経済と社会主義経済は何において顕著に違っているか？

A. how to process information. (情報処理のしかた)

B. how many people are involved in centralized decision making. (中央集権的意思決定に何人の人間が関わっているか)

C. how they understand the origin and diversity of living organisms. (生命の起源や多様性についてどのように理解しているか)

D. how bright the top leaders are. (トップのリーダーがどれほど賢いか)

Free market works by distributing information and power to make decisions among individuals because even the best and brightest mind can never process such huge data. (自由市場は、情報と決定権を個人間に分配することによって機能します。これは、最も優秀で聡明な頭脳であっても、このような膨大なデータを処理することは決して不可能であるためです。)とあるので、Aが正解。

(6) 5段落の内容に合致するのは？

A. Some smart hunter-gatherers who recognized the benefit of trade and exchange led the expansion of economic activities. (交易・交換の利点に気づいた賢い狩猟採集民が経済活動の拡大を主導した)

B. Each individual at each era have made small steps towards global and complex economy. (各時代の一人ひとりが、複雑なグローバル経済にいたる小さなステップを進めてきた)

C. Biological evolution has driven the progress of human economy. (生物学的な進化が人間の経済活動を押し進めた)

D. Exchange and division of labor are the beginning of economic disparity. (交換や分業が経済格差のはじまりである)

誰かの主導ではなく個々人の活動や選択の集積の結果として今のグローバル経済があるという本文の趣旨に最も合うBが正解。

(7) 6段落によると、道徳観の進化を推進したのは？

- A. The influence of religious leaders. (宗教指導者の影響力)
- B. Laws and regulations imposed by authorities. (権力によって課される法や規制)
- C. Trade and exchange in market societies.** (市場社会における交易や交換)
- D. Philosophical teachings and principles. (哲学的な教えや信条)

(8) 7段落によると、SNSが人間のやり取りに与えた影響は？

- A. It has made human interaction more personal and intimate. (人間のやり取りがより私的で親密になった)
- B. It has eliminated the need for face-to-face communication. (対面でのコミュニケーションの必要性を消し去った)
- C. It has created a new environment of anonymous digital interaction.** (匿名のデジタルなやり取りの環境を生み出した)
- D. It has reduced the importance of moral codes in society. (社会の道徳規範の重要性を下げた)

(9) 文中の“ripe”と意味が最も近いのは

- A. mature (成熟した)
- B. sweet (甘い)
- C. ready (機が熟した)**
- D. funded (資金が提供された)

(10) 下線部のエッセンスをもっともよく表しているのは?

First, technology proceeds, like evolution, to the adjacent possible.

- A. Technological development is influenced by adjacent societies. (技術発展は隣接する社会から影響を受ける)
 - B. Technological development is accelerated by competition between neighboring communities. (技術発展は隣接する社会との競争によって加速される)
 - C. Technological development is only possible when it is prompted by the environment. (技術発展は環境によって誘発されたときのみ可能だ)
 - D. Technological development has to be step-by-step. (技術発展は段階的、漸進的にしか進まない)**
- ある発明が次の発明の基盤になるため、一足飛びには発展しないという本文の内容に合致するDが正解。

(11) 9段落によると、1870年代の電球の発明に寄与した要素は?

- A. The desire for decorative lighting in households. (家庭での装飾的な明かりを欲したこと)
- B. The existence of great inventors like Edison. (エジソンのような優れた発明家の存在)
- C. The need for a safe, smoke-free lighting solution. (安全で煙のない照明への需要)**
- D. The absence of fire hazards in urban areas. (都市部での火災の危険性の欠如)

(12) 10段落によると、グーグルのような検索エンジンがたくさん登場した理由は

- A. Google stimulated other entrepreneurs and engineers. (グーグルが他の起業家やエンジニアに刺激を与えたから)
- B. People wanted something that helped them open their own websites. (人々は自分のウェブサイト開設を助けてくれる何かを求めているから)
- C. There was a growing demand for search engines. (検索エンジンへの需要が高まっていたから)**
- D. Google's success encouraged inventors around the world. (グーグルの成功が世界中の発明家たちを励ましたから)

(13) 11段落によると、イルカとサケが似たような体型を持っているのは

- A. they share a similar problem. (似たような課題を共有していたから)**
- B. they were designed by a higher power. (高次の力によって設計されたから)
- C. they share a common ancestor. (共通の先祖を持っているから)
- D. they are closely related species. (近縁の種だから)

(14) 12段落の内容のエッセンスをもっともよく表しているのは?

A. Culture and technology develop through the combined efforts of individuals, companies, and institutions, with leadership playing a significant role. (文化とテクノロジーは、リーダーシップが重要な役割を果たしながら、個人、企業、組織の共同努力を通じて発展する)

B. The development of culture and technology is primarily driven by individual inventors and philosophers who make breakthroughs and change minds. (文化とテクノロジーの発展は主に、画期的な進歩を遂げ、考え方を変える個々の発明家や哲学者によって推進される)

C. The evolution of culture and technology is guided by a predetermined design and planning, with artists, inventors, and philosophers leading the way. (文化とテクノロジーの進化は、芸術家、発明家、哲学者が先導し、あらかじめ決められたデザインと計画によって導かれる)

D. Culture and technology develop through a combination of coincidences, social conditions, and the readiness of ordinary people to accept new ideas. (文化とテクノロジーは、偶然、社会の変化、そして新しいアイデアを受け入れる一般の人々の準備の組み合わせによって発展する)

(15) 下線部のエッセンスをもっともよく表しているのは?

The shape of ships is not determined by human shipbuilders, but rather by the sea itself.

- A. Engineering ships is also an adaptation problem to the environment. (造船もまた、環境への適応問題だ)**
- B. Ships are designed by sea deity. (船は海の神によって設計された)
- C. Humans are helpless against natural threats. (人間は自然の脅威の前では無力だ)
- D. Shipbuilders have to obey the wishes of authority figures. (造船技師は権威ある人の意向に従わなければならない)