Ripple English
Active Learning Program

Workbook for:
“Eugenics: Science’s Biggest Mistake”

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にせずに、**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！

Eugenics: Science's Biggest Mistake

1. Richard and Lina Kretschmar were ardent Nazis. In the summer of 1939, they petitioned Hitler to euthanize their eleven-month-old child, Gerhard, who had been born blind and with deformed limbs. The parents hoped to contribute to their nation by eliminating their child from the nation's genetic heritage. Gerhard is one of the countless victims of eugenics in the 20th Century. Nazis' genetic cleansing began with "defective" children. The program was soon expanded to "genetically sick" adults and Jewish people. The belief that "Jewishness" was carried on chromosomes, inherited to children, and therefore should be **eradicated** required an incredible distortion of logic. This twisted pseudoscience was used as a justification to persecute and murder millions of innocent individuals. Eugenics is one of the biggest mistakes in the history of science. Both Darwin's theory of evolution and Mendel's genetics, when properly interpreted, do not provide any legitimate basis for genetic cleansing. How were they misunderstood and distorted into eugenics?

2. Ironically, the basis of eugenics was created by Charles Darwin's cousin, Francis Galton. He was one of the closest scientists to Darwin, and the one who misunderstood and distorted Darwinism the most. Galton believed that for any creature, including human beings, it was better to be good rather than bad; it was better to be healthy than sick, strong than weak. Almost all the progressive intellectuals of this time, including Galton, falsely interpreted Darwinian theory as a proposal to interfere with human natural selection in order to improve the genetic heritage of humanity.

3. Galton's followers were soon proposing eugenic policies, including license reproduction and sterilization of the "disabled." From Winston Churchill to Theodore Roosevelt, many politicians became passionate advocates of eugenic intervention to better humanity. Indeed, it became politically incorrect in elite circles in Britain, France and the United States not to support eugenic policies. In other words, to be against eugenics was seen to be uncaring about the future of the human race. In Germany, people gradually learned to be ashamed of any feeling of sympathy with their Jewish friends under the pressure of state-sponsored propaganda.

(1) According to paragraph 1, Richard and Lina Kretschmar petitioned Hitler to euthanize their child because
A. they didn't like him.
B. they were forced to do so.
C. they wanted to serve their nation.
D. they were ardent advocates of evolutionary theory.

(2) The word "eradicate" in the passage is closest in meaning to
A. eliminate
B. replace
C. oppress
D. execute

(3) According to paragraph 2, Darwinism was misunderstood by many as
A. an implication that humanity was imperfect.
B. a suggestion that human race should be upgraded.
C. a proposal that we should invest in genetic research.
D. a key to improve human intelligence.

(4) According to paragraph 3, which of the following is true?
A. Eugenics was a social norm in some Western cultures.
B. Eugenics provided a legitimate basis for genetic cleansing.
C. Eugenics was promoted by a few influential politicians.
D. Only those who concerned the future of humanity opposed eugenics.

4. Today, we have a consensus that eugenics is morally and scientifically wrong, so it is easy to deny eugenics and criticize people who promoted it. However, take a moment to imagine this; if everyone around you believes in eugenic ideals, can you recognize its **fallacy**? If you were in a society where criticizing eugenics would lead to being criticized in turn as "not caring about the future of humanity," would you be able to raise your voice against it?

5. Eugenics has always been wrong in both evolutionary and genetic terms. First and foremost, eugenics profoundly misinterpret the theory of evolution. Eugenicists insisted on artificial selection to eliminate “bad” genotypes and promote human “good.” But in nature, diversity is the norm, not the exception. In fact, genetic variation in a species is a vital asset for potential adaptation, and the benefit far outweighs the liabilities. Without this genetic diversity, a species will eventually lose its capacity to adapt. Also, no genotype is inherently superior. It is not that a longer neck is “better” for giraffes; it is just that a longer neck is fit to the specific environment in which giraffes happen to find themselves. Eugenicists relentlessly pursue intelligence, beauty, and health as if there were absolute standards for these qualities. But there is no objective definition for them. It is just about fitness for a particular environment.

6. Second, it is impossible in principle to achieve the eugenic ideal. Any genetic feature is not determined by one gene in a one-to-one manner. For instance, there is no gene exclusively for intelligence or health. Genetic diseases are caused by complex interactions of different genes. Also, a gene for a “genius” in one environment could be the gene for a mental disorder in another environment. Therefore, it is effectively impossible to single out and eradicate a specific selection of genes that cause diseases or disorders. Some scientists issued a moral warning against the oversimplification of the logic of genetics, but they were ignored and could not stop the misuse of Darwinism and genetics.

(5) The word “fallacy” in the passage is closest in meaning to
A. failure
B. vice
C. mischief
D. misconception

(6) According to paragraph 5, which of the following is NOT the reason why eugenics is wrong in evolutionary terms?
A. Eugenicists promote artificial selection for specific genotypes.
B. Genetic variation in a species is essential for potential adaptation.
C. Eugenicists pursue intelligence, beauty, and health as absolute standards.
D. Diversity is not usual in nature.

(7) According to paragraph 6, why was eugenic ideal impossible to achieve?
A. Diseases and disorders have nothing to do with one’s genotype.
B. Features of an organism mostly depends on environmental factors.
C. Some eligible scientists fiercely criticized eugenics.
D. Genetic functions were too complicated for humans to intervene.

7. Eugenics was nothing more than a set of ideologies, far from qualifying as science. Nonetheless, the majority of the population supported or accepted eugenic policies. Why couldn't science stop eugenics? Public opinion tends to gravitate towards the one with the least cost of building consensus. When a concept is complex, difficult, or counterintuitive, there is a lot of friction for reaching a consensus because we need to invest a large amount of time and energy learning and understanding it. Additionally, when a certain idea contradicts our favorite belief, the cost for agreement is high because we have to overcome the temptation of cognitive biases to continue believing what we want to believe. We, homo sapiens, want to understand the world as narratives with a series of intention and causality. Darwinian evolution, which claims that everything is the result of randomness and coincidence, is therefore, very likely to be misunderstood. As for genetics, it is much easier to believe that a single specific gene is responsible for a disease or Jewishness than to understand the intricate interplay of various genes and the environment. Properly understanding Darwinism and genetics has a lot of obstacles.

8. Furthermore, there was a societal background encouraging the majority to support eugenics. During the 19th and 20th centuries, there was fierce competition between nations, and they were not affluent enough to allocate sufficient resources to social welfare. Since modern total war required the effective mobilization of all economic power, resource allocation within the nation had to be carefully considered to succeed in warfare and economic competition. Eugenic ideologies, which “scientifically” supported the exclusion of the disabled or minority groups from resource allocation, easily gained acceptance by the public.

9. After all, we tend to be indifferent to the truth and correctness, mostly subconsciously. We prefer simple explanation than complex theory, and holding our favorite belief than revising it. Since we are busy both physically and mentally, it is hard to spend time and energy understanding a complicated idea that may go against what we want to believe. Eugenics had a low cost of consensus building, so scientific correctness couldn't halt its progress.

(8) According to paragraph 7, which of the following is NOT mentioned as factors that increase the cost of building a consensus?

A. Complexity of the idea.
B. Going against what people want to embrace.
C. Being contrary to what one might expect.
D. Involving a narrative.

(9) According to paragraph 8, the majority of the population were encouraged to support eugenics because

A. Eugenics provided scientific evidence for promoting human well-being.
B. Eugenics were endorsed by religious leaders and institutions.
C. Eugenics justified selective allocation limited resources.
D. Eugenics effectively increased economic power.

(10) According to paragraph 9, which of the following is true?

A. We are too busy to engage in public discussion on social issues.
B. We often reject inconvenient truths unintentionally.
C. Eugenics was dismissed because it was too complex to understand.
D. Eugenics was not halted even though people strived for the truth.

10. Eugenics is arguably the biggest mistake in the history of science. It contributed to human rights violations and persecution of minority groups by providing "scientific" support. One crucial takeaway from the fault of eugenics might be to ask ourselves what truly defines science. The most distinct characteristic of science is its willingness to admit its mistakes and ignorance. Modern science is based on the assumption that we know very little about the world. Even more critically, it accepts that the things that we think we know could be proven wrong as we gain more knowledge. When a qualified scientist publishes a paper, he or she do not insist that it is an absolute truth and never to be questioned. Instead, they think as follows; this theory seems to be the closest to the truth within the limits that humanity can currently achieve. However, if research progresses or evidence refuting it is found, this theory can always be denied, updated, or revised.

11. By contrast, traditional religions assert that everything that is important to know about the world was already known and written in sacred texts. In fact, the progress of human society had been quite slow while God and the Bible claimed their perfection. If everything was already shown by God, why do we have to research and study? It was only after we realized our ignorance that society began to advance exponentially. The essence of science is this intellectual humility to face one's own ignorance, and readiness to recognize, accept and correct one's mistakes. The very moment we say "this is right because it is science," it ceases to be science.

12. Of course science has gotten many things wrong in the past, including Eugenics. Nonetheless, the scientific community will remain our most reliable source of knowledge as long as we stay humble and open to criticism. We, in the 21st Century, look at the advocates of eugenics in the 20th Century and criticize them, saying "how foolish they were." Among the things we firmly believe in the 21st Century, what will be laughed at and criticized by people in the 22nd Century, saying "how foolish they were"?

(11) According to paragraph 10, what are worthy scientists unlikely to think?

A. "My theory is infallible."
B. "My theory may have some room to improve and update."
C. "My theory could possibly be wrong."
D. "I may find another theory disapproving this theory in the future."

(12) According to paragraph 10 and 11, what is the significant difference between science and religion?

A. Science admits its mistakes and ignorance, while religion claims to have all knowledge written in sacred texts.
B. Science promotes the pursuit of knowledge through research and study, while religion relies on God's revelation.
C. Science emphasizes intellectual humility, while religion denies the importance of modesty and humbleness.
D. Science believes in human rationality, while religion believes in almighty God.

(13) What does the author imply in paragraph 12?

A. Advocates of eugenics deserve harsh criticism.
B. Science is the least dependable source of information.
C. We should not make the same kind of mistakes as eugenics.
D. There must also be something we falsely believe in the 21st Century.

(14) Within the whole passage, all of the following were mentioned, EXCEPT

A. A gene for one feature could work as a gene for other features.
B. Genetic diversity in a species provides more advantages than disadvantages.
C. The masses with good sense were convinced that eugenics was wrong.
D. Galton distorted the theory of evolution to create eugenics.

Answers

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

(1) 1段落によると、クレッチマー夫妻が息子の安楽死をヒトラーに嘆願した理由は
A. they didn't like him.（息子が好きではなかったから）
B. they were forced to do so.（そのように強いられたから）
C. they wanted to serve their nation.（国家に貢献したかったから）
D. they were ardent advocates of evolutionary theory.（進化論の熱心な信奉者だったから）
本文中の"The parents hoped to contribute to their nation by eliminating their child from the nation's genetic heritage." の内容に沿うCが正解。

(2) 文中の"eradicate（根絶する）"と意味が最も近いのは
A. eliminate （取り除く、排除する）
B. replace （置き換える）
C. oppress （抑圧する）
D. execute （処刑する）

(3) 2段落によると、進化論は多くの人に次のように誤解された
A. an implication that humanity was imperfect.（人類は不完全であるという示唆）
B. a suggestion that human race should be upgraded.（人類は改善されるべきであるという提案）
C. a proposal that we should invest in genetic research.（遺伝学の研究に投資すべきであるという提案）
D. a key to improve human intelligence.（人の知性を向上するためのカギ）
"falsely interpreted Darwinian theory as a proposal to interfere with human natural selection in order to improve the genetic heritage of humanity."の内容を簡潔に言い換えているBが正解。

(4) 3段落の内容に合致するのは？
A. Eugenics was a social norm in some Western cultures. （優生学はいくつかの西洋諸国では社会規範であった）
B. Eugenics provided a legitimate basis for genetic cleansing.（優生学は遺伝的浄化に正当な根拠を与えた）
C. Eugenics was promoted by a few influential politicians.（優生学は少数の影響力のある政治家によって推進された）
D. Only those who concerned the future of humanity opposed eugenics.（人類の未来を懸念する人たちだけが優生学に反対した）
"it became politically incorrect in elite circles in Britain, France and the United States not to support eugenic policies."の内容を言い換えているAが正解。

(5) 文中の "fallacy（誤り、誤謬）" と意味が最も近いのは
A. failure（失敗）
B. vice（悪徳）
C. mischief （いたずら）
D. misconception（誤解）

(6) 5段落によると、進化論の観点で優生学が誤っている理由として間違っているものは？
A. Eugenicists promote artificial selection for specific genotypes.（優生学は特定の遺伝型を人工的な淘汰で推し進める）
B. Genetic variation in a species is essential for potential adaptation. （遺伝的多様性は種の適応に必要不可欠だ）
C. Eugenicists pursue intelligence, beauty, and health as absolute standards.（優生学者は知性や美しさや健康を絶対的な基準として追求する）
D. Diversity is not usual in nature.（多様性は自然界では普通ではない）

(7) 6段落によると、優生学の理想が達成不可能だった理由は？
A. Diseases and disorders have nothing to do with one's genotype.（疾患や不全は遺伝型とは関係がないから）
B. Features of an organism mostly depends on environmental factors.（生物の特徴はほぼ環境要因に依存するから）
C. Some eligible scientists fiercely criticized eugenics.（ちゃんとした科学者たちが猛烈に批判したから）
D. Genetic functions were too complicated for humans to intervene.（遺伝的な機能が非常に複雑で人間が介入できるようなものではないから）

(8) 7段落によると、合意形成のコストを上げる要因として言及されていないのは？
A. Complexity of the idea.（その概念の複雑性）
B. Going against what people want to embrace.（人々が信じたいことに反していること）
C. Being contrary to what one might expect.（予想と反していること）
D. Involving a narrative.（物語を伴っていること）
物語を伴っていることはむしろ人々の理解を容易にするので合意形成コストは下がる。

(9) 8段落によると、人口の中の多数派が優生学を支持する動機を持っていた理由は
A. Eugenics provided scientific evidence for promoting human well-being.（優生学が人間の福利を増進するための科学的なエビデンスを提供してくれたから）
B. Eugenics were endorsed by religious leaders and institutions.（優生学が宗教指導者や機関から支持・承認されていたから）
C. Eugenics justified selective allocation limited resources.（優生学が限られたリソースの選択的な配分を正当化してくれたから）

D. Eugenics effectively increased economic power of the nation.（優生学が国家の経済力を効果的に向上させたから）

(10) 9段落の内容に合致するのは？

A. We are too busy to engage in public discussion on social issues.（我々は忙しすぎて社会的な問題についての議論に参加できない）

B. We often reject inconvenient truths unintentionally.（我々はしばしば無意識に都合の悪い真実を退けてしまう）

C. Eugenics was dismissed because it was too complex to understand.（優生学は難解だったため退けられた）

D. Eugenics was not halted even though people strived for the truth.（人々が真実を求めて努力したにもかかわらず、優生学は止められなかった）

“”After all, we tend to be indifferent to the truth and correctness, mostly subconsciously. We prefer simple explanation than complex theory, and holding our favorite belief than revising it.”の内容の一部について端的に言及しているBが正解。

(11) 10段落によると、真っ当な科学者が考えそうにないことはどれか？

According to paragraph 10, what are worthy scientists unlikely to think?

A. “My theory is infallible.”（私の理論は常に正しい）

B. “My theory may have some room to improve and update.”（私の理論には改善と更新の余地があるかもしれない）

C. “My theory could possibly be wrong.”（私の理論は間違っている可能性もある）

D. “I may find another theory disapproving this theory in the future.”（将来、この理論を否定する別の理論が見つかるかもしれない）

(12) 10,11段落によると、科学と宗教の顕著な違いは？

A. Science admits its mistakes and ignorance, while religion claims to have all knowledge written in sacred texts.（科学は自らの間違いと無知を認めているが、宗教はすべての知識は聖典に書かれていると主張している）

B. Science promotes the pursuit of knowledge through research and study, while religion relies on God's revelation（科学は調査と研究を通じて知識の追求を促進するが、宗教は神の啓示に依存している）.

C. Science emphasizes intellectual humility, while religion denies the importance of modesty and humbleness.（科学は知的謙虚さを強調しているが、宗教は謙虚さと謙虚さの重要性を否定している）

D. Science believes in human rationality, while religion believes in almighty God.（科学は人間の合理性を信じるが、宗教は全能の神を信じる）

(13) 12段落が示唆していることは？

A. Advocates of eugenics deserve harsh criticism.（優生学の支持者は厳しい批判を受けるに値する）

B. Science is the least dependable source of information.（科学は最も信頼できない情報源だ）

C. We should not make the same kind of mistakes as eugenics.（我々は優生学と同じような失敗を犯してはならない）

D. There must also be something we falsely believe in the 21st Century.（21世紀にも誤って信じているものがあるはずだ）

(14) 全文を通して言及されていないのは次のうちどれか？

A. A gene for one feature could work as a gene for other features.（ある特徴を生み出す遺伝子は別の特徴の遺伝子として機能することもある。６段落）

B. Genetic diversity in a species provides more advantages than disadvantages.（種の中の遺伝的な多様性は不利益より大きな利益をもたらす。５段落）

C. The masses with good sense were convinced that eugenics was wrong.（良識ある一般大衆は優生学が誤っていると確信していた。３段落の内容に反する）

D. Galton distorted the theory of evolution to create eugenics.（ゴールトンは進化論を歪曲して優生学を生み出した。２段落）