

1 Read the following passage and answer the questions.

[1] Technology, innovation and entrepreneurship\* have been integral\* to reducing the cost of business and bringing the world's producers and consumers closer together. In the 1970s and 1980s, the proliferation\* of standardized cargo containers revolutionized global shipping, dramatically reducing transportation and distribution costs and opening the door to international commerce on a grand scale. In the 1990s and 2000s, widespread adoption of the internet, mobile phones, and related technologies slashed\* communications and information costs, enabling the emergence of more nimble\* and efficient methods of production.

[2] The U.S. economy is now just beginning to reap\* the dividends\* of the latest supply-side revolution. Massive investments in e-commerce design and infrastructure in the 2010s and 2020s are helping reduce barriers to market entry for businesses of all sizes. This is making markets larger and creating greater scope for specialization, economies of scale, and collaboration. The resulting productivity gains are driving down business costs, keeping consumer prices in check\*, and encouraging investment and growth.

[3] E-commerce has transformed the global retail industry. In 2020, over two billion people purchased goods or services online. Global e-commerce retail sales surpassed \$4.2 trillion in 2020, accounting for 17.8% of all global retail sales – up from 7.4% in 2015. That share is projected to be 21% in 2022 and 24.5% by 2025.

[4] Much like Walmart, Target, and other mega-retailers were able to use their scale to purchase in bulk\* and deliver the benefits of lower prices to U.S. shoppers, e-commerce platforms are providing businesses with ready access to billions of the world's consumers. Online “marketplaces,” including Amazon's and eBay's, account for the largest share of e-commerce retail purchases worldwide. But Taobao and Tmall – both operated by Alibaba Group – are also major online marketplaces, with U.S. entities\* benefiting considerably from the global reach of those platforms.

[5] According to a new study from NDP Analytics, U.S. brands generated direct revenues of \$40 billion from their sales to Chinese consumers on Alibaba's e-commerce platforms in 2020. Those sales added an additional \$39 billion to U.S. GDP, generated \$21 billion in wages for U.S. workers, and supported 256,000 U.S. jobs.

[6] To give those figures some context\*, in 2016 the U.S. International Trade Commission estimated the Trans-Pacific Partnership (TPP) – a trade agreement to reduce tariffs\* and other administrative barriers to trade – would increase GDP by \$42.7 billion and create 128,000 new jobs *by 15 years after the agreement first took effect*. So, as a tool to facilitate cross-border commerce by removing hurdles and reducing business costs for American companies, Alibaba's e-commerce infrastructure is punching well above its weight.

[7] Over 95% of the world's customers live outside of the United States. But the traditional high costs and uncertainty associated with reaching those customers and achieving sustained success in overseas markets have deterred\* most U.S. businesses from even trying. Designing, producing, packaging, and shipping goods from factories to ports and then across oceans is daunting\* enough. But once goods clear foreign customs, they confront a whole new maze of rules, regulations, inland distribution conundrums\*, and cultural and language barriers.

[8] **a** The costs of building a business around a foreign customer base, understanding foreign customs and regulatory protocols\*, payments, marketing trends, logistics and otherwise operating successfully abroad are daunting, especially for smaller businesses. **b** For many years, governments at all levels have been trying to boost

the fortunes of small and medium sized companies, noting that current commercial behemoths\* were once small entities. **c**

[9] If the hundreds of thousands of U.S. businesses that do not yet sell abroad are going to try to reach those 95% of global consumers, they will need to be more comfortable exporting. **d** That means greater transparency and predictability regarding the costs confronting them when they enter and hope to succeed in foreign markets. By providing virtual business infrastructure and ready access to customers who are increasingly comfortable shopping online, e-commerce platforms enable businesses to leapfrog\* many of those uncertainties.

[10] Alibaba is in the vanguard\* of designing, building, and operating e-commerce infrastructure, while keeping business costs down. Its suite of e-commerce platforms is intended to accommodate\* a wide variety of entities, including large global brands, mid-sized companies, small firms, and individual artisans\*, who sell consumer staples\*, fresh food, consumer electronics, luxury goods, and much more.

[11] Lowering the costs of selling into foreign markets encourages more businesses to export. Those sales generate positive direct and indirect effects on the U.S. economy, through their impact on companies along the supply chain and in communities across the United States. The benefits to U.S. industry and job creation have been substantial\*.

[12] As was the case with\* the advent\* of container shipping and the internet in previous decades, the confluence\* of technology, innovation, and entrepreneurship is once again opening up new opportunities for U.S. businesses to reach billions of the world's consumers at a much lower cost and with greater likelihood\* of long-term success. Alibaba's pioneering efforts are part of this rich heritage\*.

[出典]

“The E-Commerce Revolution Is Transforming Global Trade And Benefitting The U.S. Economy”, Dan Ikenson, June 13, 2022, Forbes,

<https://www.forbes.com/sites/danikenson/2022/06/13/the-e-commerce-revolution-is-transforming-global-trade-and-benefitting-the-us-economy/>, ※一部略 From Forbes. ©

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注) \*entrepreneurship: 起業家精神

\*integral: 不可欠な

\*proliferation: 急増

\*slash: ～を大幅に削減する

\*nimble: 軽快な

\*reap: (利益)を収める, 受ける

\*dividend: 配当

\*keep ～ in check: ～を抑制する

\*in bulk: 大量に

\*entity: 独立して存在する物, 法人, 企業

\*context: 背景, 前後関係

\*tariff: 関税

\*deter ～ from doing: ～が…することを阻止する

\*daunting: 気力をくじくような

\*conundrum: 難問

令和7年度 データ&イノベーション学群 総合型選抜

英 語 3/10

- \*regulatory protocol: 規制, 規約
- \*behemoth: 巨大な物
- \*leapfrog: ～を飛び越える
- \*vanguard: 先駆者
- \*accommodate: ～の役に立つ
- \*artisan: 職人
- \*consumer staples: 生活必需品
- \*substantial: 相当な
- \*as is the case with ～: ～と同様に
- \*advent: 出現
- \*confluence: 集合
- \*likelihood: 見込み
- \*heritage: 受け継いだ財産

- (1) The author discusses trends in e-commerce retail sales in paragraph [3] in order to
- a. argue that the extreme rate at which the e-commerce industry is growing is likely to be unsustainable in the long-term.
  - b. show that e-commerce has already surpassed traditional retail avenues in terms of their share in the industry.
  - c. clarify that while e-commerce has led to growth in the retail industry, it has also introduced negative effects.
  - d. illustrate the rapid rate at which e-commerce has grown to occupy a significant portion of the retail sector.
- (2) Why does the author refer to Alibaba's e-commerce platforms in paragraph [5]?
- a. To indicate that while U.S. consumers benefit from cheap products sold on Chinese platforms, U.S. businesses are suffering losses as a result.
  - b. To demonstrate that Chinese platforms are more beneficial for American consumers and businesses than they are for Chinese ones.
  - c. To illustrate how transactions conducted on non-American platforms can have a positive impact on the American economy.
  - d. To make the case that American e-commerce platforms like Amazon and eBay will eventually be outperformed by non-American platforms.

- (3) Which of the following best expresses the essential information in the underlined sentence in paragraph [6]?
- a. Surprisingly, Alibaba has instigated more growth for the U.S. economy than the TPP was estimated to generate.
  - b. Without question, the TPP would have allowed Alibaba to expand at a much faster rate had it come into effect.
  - c. In reality, the barriers proposed in the TPP would likely have been detrimental to the growth of Alibaba and other platforms.
  - d. As expected, the TPP has not been shown to be as effective a tool for revenue and job creation compared to Alibaba.
- (4) According to paragraph [7], which of the following is **NOT** stated as one of the reasons why American companies have been reluctant to sell products overseas?
- a. The difficulty of navigating cultural and linguistic differences when marketing to foreign consumers.
  - b. Obstacles in the form of complex foreign rules and regulations related to import and distribution.
  - c. Statistics that have shown that sales of American products in overseas markets are rarely profitable.
  - d. Costs associated with shipping, logistics, design, packaging, and production.
- (5) According to paragraph [10], which of the following is true about Alibaba's business model?
- a. Its platforms have a much higher barrier of entry for small businesses than they do for large, established corporations.
  - b. The group outsources the work of managing its platforms to other companies, which are often small- and medium-sized businesses.
  - c. The group emphasizes quality over quantity by enforcing restrictions on the types of companies that can use their platforms.
  - d. Its platforms are designed to serve as sales avenues for a diverse range of entities, regardless of the type of product.
- (6) The author mentions container shipping in paragraph [12] in order to
- a. draw attention to the similar manner in which various innovations have led to significant leaps in economic opportunity.
  - b. highlight the contrast between how much revenue has been generated by container shipping versus e-commerce.
  - c. show that the e-commerce revolution would have never happened without the advent of container shipping.
  - d. illustrate how container shipping is a technology of the past that will be overtaken by new innovations of e-commerce companies.



- (7) Look at the four squares [■] that indicate where the following sentence could be added to the passage.

**Despite incentives and programs and agencies devoted to promoting the success of small and medium enterprises, large U.S. businesses still account for more than 80 percent of U.S. exports.**

Where would the sentence best fit?

- (8) An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the THREE answer choices that express the most important ideas in the passage.

**In recent decades, the global commerce landscape has been transformed by advancements in technology.**

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- a. The rise of e-commerce has been crucial for this transformation, offering unprecedented access to global markets and fostering an environment of increased specialization and economic efficiency.
- b. The most significant advancement in this transformation has been the advent of standardized shipping containers, which have revolutionized the way products are distributed around the globe.
- c. Mega-retailers like Walmart and Target have begun to lose their competitive edge as the market becomes more and more saturated by e-commerce giants such as Amazon and eBay.
- d. Alibaba and similar platforms have opened up international markets to businesses while also boosting the American economy through job creation and revenue generation.
- e. Though American companies have traditionally found it challenging to enter foreign markets, e-commerce platforms like Alibaba have made it easier for small- and medium-sized businesses to export their products to consumers around the globe.
- f. On Alibaba, the product selection spans a vast spectrum, encompassing everything from everyday essentials and electronics manufactured in large quantities by major corporations to unique designer items and high-end luxury products, catering to a broad range of consumer needs and preferences.

2 Read the following passage and answer the questions.

- [1] The slash-and-burn agriculture\* practiced by many Indigenous\* societies across the world can actually have a positive impact on forests, according to a new study done in Belize.
- [2] Researchers found that in areas of the rainforest in which Indigenous farmers using slash-and-burn techniques created intermediate-sized farm patches\* – neither too small nor too large – there were increases in forest plant diversity.
- [3] This contradicts what had long been the standard view in the past, promoted by the United Nations and others, identifying slash-and-burn as a major cause of deforestation\* around the world, said Sean Downey, lead author of the study and associate professor of anthropology\* at The Ohio State University.
- [4] “Our study provides quantitative\* evidence that these traditional agricultural practices can have positive outcomes on forests,” said Downey, who is also a core member of Ohio State’s Sustainability Institute and a member of the Translational Data Analytics Institute.
- [5] “Indigenous communities deeply understand forest ecology\* on their own terms and that knowledge leads to practices that can increase biodiversity and help enhance the ecosystem.”
- [6] The study was published online recently in the Nature journal *Communications: Earth & Environment*. **a**
- [7] Researchers from Ohio State teamed up with local researchers and community members to study two Q’eqchi’ Maya villages in southern Belize.
- [8] **b** The approximately 18,000-acre study area is in the Toledo District of Belize and encompasses\* the Maya villages of Crique Sarco and Graham Creek. Downey has been working in the villages since 2005.
- [9] **c** More than three-quarters of residents of the two villages rely on slash-and-burn agriculture – called swidden\* by anthropologists – as one of the main sources of their livelihood\*. **d**
- [10] Swidden agriculture occurs on lands owned by the community and used under their customary rules and norms\*. Local households will clear a section of the forest for farming based on their needs. They will burn the trees they cut down to return the nutrients to the soil. They will farm the land for a few years and then let it return to its natural state, while they use a new parcel\* of forest to farm.
- [11] The researchers used a variety of techniques, including remote sensing\* from drones and mapping on the ground, to estimate the number of plant species in specific areas and link that to landscape disturbance in the primary swidden use areas of both villages in the study.
- [12] During April 2018, the researchers used long-range drones flying at 1,500 feet and fitted with a 5-band multispectral sensor\* to scan the study area. The sensors picked up small variations in the light reflected from trees and other plants that make up the overstory\* of the forests – what scientists call spectral diversity\*.
- [13] Higher levels of spectral diversity correspond with a greater diversity in the tree and plant life, Downey said.
- [14] Because the drones flew so close to the top of the overstory, the sensors were able to capture high-resolution imagery\* that is not available by satellites, he said. That allowed researchers to get a very fine-grain analysis\* of biodiversity.
- [15] It also allowed the researchers to locate small disturbances in the forest, including those from swidden agriculture, and calculate a “fragmentation\* index” for regions of the forest.

- [16] In addition, the researchers worked with a local mapping team that collected land use history data to determine how long it had been since a particular patch of forest had been used for swidden agriculture.
- [17] “When you have a mature forest, the large trees create a canopy\* that blocks sunlight from getting to the forest floor, preventing other plant species from growing,” Downey said.
- [18] “What swidden agriculture does is open a patch of forest that lets the sunshine in and allows other plant species to take root and grow. And when that happens, you’re increasing the diversity in the forest, which is a good thing.”
- [19] Downey noted that this happens naturally through lightning strikes, hurricanes and other storms that open up areas of forest. Indigenous farmers are leveraging the same kind of processes, creating patches that are just the right size to maximize species diversity.
- [20] The intermediate-sized patches are key to making this work, he said. Mature forests naturally have very low numbers of rare species that operate as a seed bank. If cleared patches are too small, these rare plants don’t have the opportunity to grow. If the patches are too big, that can eliminate the seed bank for the area so that the rare species can’t come back.
- [21] “You have to get the spatial scale of these clearings just right\* to actually increase the biodiversity,” Downey said. “That’s what we found the local farmers were normally doing with swidden agriculture.”
- [22] The evidence provided by this study about the positive impact of swidden agriculture is especially important now as the international community focuses on Indigenous agriculture in terms of climate change, Downey said.
- [23] Downey said this research suggests that top-down regulation of swidden agriculture by national and international groups is not optimal\*. Rather, climate change programs should be willing to support practices and institutions that may seem distantly related to conservation, but which may be critical to Indigenous cultures and livelihoods.
- [24] “Our study demonstrates that Indigenous communities, supported by their customary practices and cultural norms, can maintain this intermediate level of disturbance in forests that supports or even enhances biodiversity,” he said.

[出典]

“Slash-and-burn agriculture can increase forest biodiversity”, Jeff Grabmeier, November 28, 2023, Ohio State News, <https://news.osu.edu/slash-and-burn-agriculture-can-increase-forest-biodiversity/>,

※一部略

注) \*slash-and-burn agriculture: 焼畑農業

\*Indigenous: 土着の

\*patch: 一区画

\*deforestation: 森林伐採

\*anthropology: 人類学

\*quantitative: 定量的な

\*ecology: 生態学

\*encompass: ～を含む

\*swidden: 焼畑 (の)

令和7年度 データ&イノベーション学群 総合型選抜

英 語 8/10

\*livelihood: 生計

\*norms: 規範

\*parcel: 一区画

\*remote sensing: リモートセンシング, 遠隔探査

\*5-band multispectral sensor: 5バンドマルチスペクトルセンサー (5つの波長帯の光を観測できるセンサー)

\*overstory: (森林の) 上層, 林冠層

\*spectral diversity: (植物における) スペクトル多様性

\*high-resolution imagery: 高解像度イメージ

\*fine-grain analysis: 詳細な分析

\*fragmentation: 断片化

\*canopy: 樹冠, 林冠

\*get ~ right: ~を適切にする

\*optimal: 最適の

- (1) According to paragraphs [2] through [4], which of the following is true of slash-and-burn agriculture?
- Though once thought to be a contributor to the destruction of forests, the technique is now believed to increase the variety of plant life.
  - While scientists used to believe that the practice diminished farm productivity, the opposite has been shown to be true.
  - Previously believed to promote biodiversity in the flora of forests, the practice has been shown to be destructive to certain species.
  - New research shows that the practice leads to increases in forest area, challenging the notion that it made forests smaller.
- (2) The author discusses the knowledge of Indigenous farmers in paragraph [5] in order to
- highlight the manner in which Indigenous practices contribute to deforestation.
  - argue against the use of modern agricultural technology in favor of traditional methods.
  - suggest that Indigenous practices can lead to greater biodiversity in the forests.
  - emphasize the extent to which agricultural technologies have evolved over time.
- (3) In paragraph [10], which of the following is **NOT** mentioned as an aspect of swidden agriculture practices?
- After crops have begun to grow, local households work to prevent new parcels of forest from forming.
  - After using farmland for a certain amount of time, the space is abandoned to allow the forest to regrow.
  - Agricultural work is carried out in accordance with conventions shaped by the local community.
  - The trees in a certain area of forest are felled, then set on fire to create enough space to grow crops.

- (4) Why does the author refer to lightning strikes and hurricanes in paragraph [19]?
- a. To draw a contrast between the space cleared by disasters versus the space cleared through swidden agriculture in terms of their effect on biodiversity.
  - b. To explain that farmers can use the damage caused by these events to their advantage by growing a diverse range of crops in affected areas.
  - c. To describe how these events lead to the death of large amounts of flora in the affected area, thereby negatively impacting the biodiversity of forests.
  - d. To show how swidden agricultural practices mimic the effects of these events, thereby helping maintain the biodiversity of forests.
- (5) Which of the following best expresses the essential information in the underlined sentence in paragraph [21]?
- a. Findings indicate that the level of biodiversity in a forest usually depends on the amount of farmland in the surrounding area.
  - b. It was revealed that a method to increase the diversity of flora in the forest had already existed in traditional farming practices.
  - c. Evidence suggests that more and more farmers are turning to Indigenous techniques in order to contribute to forest biodiversity.
  - d. It was found that farmers who engaged in Indigenous agricultural practices tended to be more environmentally conscious.
- (6) According to paragraph [23], which of the following is true of Downey's view on regulations on swidden agriculture?
- a. Though Downey believes that the practices benefit biodiversity, he also supports regulations as a means of facilitating the proliferation of modern farming methods.
  - b. While Downey acknowledges that swidden agriculture exacerbates climate change, he disagrees with regulations that erase Indigenous culture.
  - c. Downey supports more rigorous regulations on swidden agriculture and similar practices that negatively impact biodiversity and the climate.
  - d. Downey suggests that these regulations are not the most effective and that climate change initiatives should incorporate Indigenous practices like swidden agriculture.
- (7) Look at the four squares [■] that indicate where the following sentence could be added to the passage.
- Corn is the most important crop.**
- Where would the sentence best fit?

## 令和7年度 データ&イノベーション学群 総合型選抜

英 語 10/10

- 3 次の英文の要旨を、句読点も含め 80 字以内の日本語でまとめ、解答欄に書きなさい。

The Industrial Revolution began in Britain for a number of reasons. There was an efficient agricultural system that could feed a booming population. With its coalfields, Britain had abundant cheap fuel and, in 1700, was already skilled in mining, producing 80% of the coal in Europe. Another knowledge advantage for Britain was the use of coke\* as a fuel to make high-quality iron. Coke is made from baking coal in a furnace\* to remove as many impurities\* as possible. The first working blast furnace\* employing coke was used in 1709 at Coalbrookdale in Shropshire, a works\* owned by Abraham Darby (1678-1717). Britain, then, had both the material to make machines and the fuel to power them even before the Industrial Revolution proper\* began.

Labour in Britain was relatively expensive because of the expanding agricultural system, which was now using more and more enclosed land (land requisitioned\* for farming from common land). Farms needed more labourers, but fewer were available as urbanisation developed, and so wages rose. This fact meant that inventors had a profit motive to design machines that could reduce labour. Capitalists were given favourable conditions by governments to invest in these inventions and Britain's trade empire, particularly that established by the East India Company, could be used to exploit such innovations by providing markets for manufactured goods. There was, too, a trend for people to leave the countryside to find work, and this was exploited and accelerated by business owners able to set up machine-based factories, particularly textile mills\*. Once the urbanisation ball was rolling at a certain pace, inventions accelerated the 'revolution' as more machines were invented to make even better machines, and so mechanisation\* surged on\*. The railways continued the process by creating even more demand for coal, iron, and steel. The pace of urbanisation increased further, and a new middle-class consumer market was created, which drove demand for more innovation and more products. While some other countries had some of these causal factors in place, none had as many as Britain.

[出典]

“British Industrial Revolution” , Mark Cartwright, May 2, 2023, WORLD HISTORY  
ENCYCLOPEDIA, [https://www.worldhistory.org/British\\_Industrial\\_Revolution/](https://www.worldhistory.org/British_Industrial_Revolution/)

注) \*coke: コークス

\*furnace: 炉

\*impurity: 不純物

\*blast furnace: 高炉

\*works: 工場

\*proper: 厳密な意味での、真の

\*requisition: ～を接収する

\*textile mill: 繊維工場

\*mechanisation: 機械化

\*surge on: 急激に進む