

H 6 英 語

この冊子は、英語の問題で 1 ページより 25 ページまであります。

〔注 意〕

- (1) 試験開始の指示があるまで、この冊子を開いてはいけません。
- (2) 監督者から受験番号等記入の指示があったら、解答用マークシートに受験番号と氏名を記入し、さらに受験番号をマークしてください。
- (3) 解答は、所定の解答用マークシートにマークしたものが採点されます。
- (4) 解答用マークシートについて
 - ① 解答用マークシートは、絶対に折り曲げてはいけません。
 - ② マークには黒鉛筆(H B または B)を使用してください。
指定の黒鉛筆以外でマークした場合、採点できないことがあります。
 - ③ 誤ってマークした場合は、消しゴムで丁寧に消し、消しくずを完全に取り除いたうえで、新たにマークしてください。
 - ④ 解答欄のマークは、横 1 行について 1 箇所に限ります。
2 箇所以上マークすると採点されません。
あいまいなマークは無効となるので、はっきりマークしてください。
 - ⑤ 解答用マークシートに記載されている解答上の注意事項を、必ず読んでから解答してください。
- (5) 試験開始の指示があったら、初めに問題冊子のページ数を確認してください。
ページの落丁・乱丁、印刷不鮮明等に気づいた場合は、手を挙げて監督者に知らせてください。
- (6) 問題冊子は、試験終了後、持ち帰ってください。

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- 1 次の英文を読んで以下の問いに答えなさい。*印をつけた語句には下に[注]があります。 (経営学科は48点, ビジネスエコンミクス学科は32点)

Is it ethical* to replace a worker with a robot?

This was a question asked at a panel discussion at the Milken Institute's* Global Conference Tuesday. Machines have already begun replacing jobs, ranging from factory workers to baseball umpires to lawyers.

Most of the people on the panel said they believed it was ok. Pedro Domingos, head of machine learning research at investment firm the D. E. Shaw Group and professor at the University of Washington, explained that, [A] artificial intelligence, there will be more demand for existing jobs, and new jobs will be created that are unimaginable today. This is similar to how we couldn't imagine a web app developer* decades ago, and now millions make a living doing that today, he said. John Kelly III, executive vice president of IBM, was similarly (1), adding, "Man and machine working together always beat or make a better decision than a man or a machine independently."

I am skeptical of these claims. Automation can contribute to the rise of ^(a) precarious work, such as contractors and freelancers who lack full-time ^(b) benefits*. Artificial intelligence likely will not create entirely new fields of expertise or careers as computers did for computer scientists. And humans and machines working together can be more (2) than either working alone. For example, an autonomous* car that uses "level three technology" drives itself in most situations but hands control back to a human driver in emergency situations. This setup* requires humans not to be ^(c) lulled into distraction* while the car is driving autonomously, as was the case in a fatal accident involving an Uber* self-driving test car in Arizona.

Critically, we must ^(d) optimize the division of labor between humans and machines to ensure that human + machine is superior to either working in isolation. The following are three frameworks* to consider.

First, let humans and machines play to their moral strengths — algorithms* are often good at achieving utilitarian* outcomes, such as [X]. But humans are often good at enforcing moral rules, such as making sure not to discriminate based on race and gender. Plenty of algorithmic programs designed to do good, like Google Translate*, are prone to racial or gender bias, which require humans to step in and correct course.

Second, let robots do the robotic work and let humans do the rest. For example, a study demonstrates how an artificial intelligence platform* and human experts working together fare better at identifying cyberattacks than either humans or machines working alone. This is because the platform does the dull, rote work of sifting through tons of data, while the human experts sample the platform's output, identifying anomalous cases and feeding that back to the platform, which then improves on detecting cyberattacks.

Last, divide up social work. [B] our tendency to dislike robots in social contexts, outsourcing* some social interaction* to robots can reduce burnout in jobs that require managing others' emotions. For example, research shows that automated customer service systems can efficiently route customers to human operators, managing the (3) parts of the call (such as user authentication*) so as to free up the human agents to handle the more substantive issues.

[注]

ethical 「倫理的な」

the Milken Institute 「ミルケンインスティテュート」(米国の金融・経済シンクタンク)

web app developer 「ウェブアプリケーション開発者」

benefit 「(社会保障制度などによる年金・保険などの)給付金, 手当」

autonomous 「自律性の」 setup 「仕組み」

distraction 「注意散漫」

Uber 「ウーバー」(ウェブサイトを使って配車サービスを提供する米国のITベンチャー)

framework 「準拠枠」

algorithm 「(コンピューター)アルゴリズム」(プログラムの解法手順)

utilitarian 「実用本位の, 功利主義の」

Google Translate 「グーグル翻訳」

platform 「(コンピューター)プラットフォーム」(コンピューター利用の基盤となるソフトまたはハードの環境)

outsource 「(業務を)外部に委託する」

social interaction 「社会的相互作用, 個人間・集団間のやりとり」

authentication 「(コンピューター)認証」

(1) 下線部(a)～(i)の各語と最も近い意味の語(句)をそれぞれ1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

(a) skeptical

1 sentimental

2 supportive

3 suspicious

4 sympathetic

(b) precarious

1 easygoing

2 insecure

3 physical

4 stable

(c) lulled

1 added

2 broken

3 led

4 seen

(d) optimize

1 get rid of

2 make the most of

3 play the role of

4 take part in

(e) prone

1 opposed

2 recommended

3 resistant

4 subject

(f) rote

1 academic

2 creative

3 reasonable

4 repetitive

(g) anomalous

1 decent

2 decisive

3 depressing

4 deviant

(h) burnout

1 authority

2 exhaustion

3 gratitude

4 hostility

(i) substantive

1 flexible

2 impersonal

3 obvious

4 significant

(2) 文中の空所(1)～(3)を本文の内容に合うように埋めるのに、最も適切な語をそれぞれ1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

- | | | |
|-----|----------------|---------------|
| (1) | 1 cynical | 2 distressed |
| | 3 hesitant | 4 optimistic |
| (2) | 1 amusing | 2 complicated |
| | 3 effective | 4 reliant |
| (3) | 1 ambitious | 2 frustrating |
| | 3 intellectual | 4 satisfying |

(3) 文中の空所[A]と[B]を本文の内容に合うように埋めるのに、最も適切な語(句)をそれぞれ1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

- | | | |
|-----|--------------------|------------------|
| [A] | 1 as an example of | 2 as a result of |
| | 3 in contrast to | 4 prior to |
| [B] | 1 Because of | 2 Despite |
| | 3 Unless | 4 Without |

(4) 文中の空所[X]を本文の内容に合うように埋めるのに、最も適切な語句を1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

- 1 being good to people who are fair
- 2 doing the most good for the most people
- 3 encouraging people to do better than others
- 4 using instincts to decide what is good

- (5) 本文の内容に最も近い文を A～D 群の 1～4 からそれぞれ一つ選び、その番号を解答用マークシートにマークしなさい。

A 群

- 1 Artificial intelligence can be advantageous as it helps contractors and freelancers have better working conditions.
- 2 Many people were able to predict the rise of jobs like web app developers as soon as artificial intelligence became commonplace.
- 3 Some intellectual professions such as lawyers can not be substituted by robots even with the spread of artificial intelligence.
- 4 While the development of computers created new kinds of professions, the author believes that artificial intelligence will not necessarily do the same.

B 群

- 1 In John Kelly III's view, artificial intelligence will make better decisions on which professions are crucial for the society in the future.
- 2 Pedro Domingos and the author have a positive outlook for artificial intelligence as they think it will open up opportunities for new careers.
- 3 Self-driving cars are one of the most reliant forms of transportation as they ensure accident-free rides.
- 4 The author warns that the ability to utilize cars that use “level three technology” depends on humans staying alert at all times and taking control in emergencies.

C群

- 1 Algorithmic programs are designed to distinguish between what is and what is not considered racial discrimination.
- 2 As artificial intelligence learns to understand human emotions, automated customer service systems will become more efficient.
- 3 A way to prevent cyberattacks from happening is to have human experts sift through the data set first before they feed it into the cyberattack-identifying platform.
- 4 Using robots in social contexts may be beneficial for easing the annoyance that comes with some jobs.

D群

- 1 Admitting that machines are superior to humans in all aspects is at the core of the author's belief about making human + machine work.
- 2 The author believes that it is ethically right to replace a worker with a robot because of robots' superb performance in machine learning.
- 3 The author's framework is based on the idea that robots will never be able to replace human workers as long as the former continues to behave ethically.
- 4 Whether or not the efficiency of work done by humans and machines together can surpass either of them working on their own depends on how well work is assigned.

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2

次の英文を読んで以下の問いに答えなさい。*印をつけた語句には下に[注]があります。
(経営学科は 57 点, ビジネスエコノミクス学科は 38 点)

One of the extraordinary things about the modern world is that so much of it takes food for granted. For most of recorded history, the struggle to eat has been the main focus of human activity, and all but a handful of people were either farmers or farm workers. Starvation was an ever-present threat. Even the best years rarely yielded much of a surplus* to carry over as an insurance against leaner* times. In the worst, none but the powerful could be sure of a full stomach.

Now most people in rich countries never have to worry about where the next meal is coming from. In 1900 two in every five American workers laboured on a farm; now one in 50 does. Even in poor places such as India, where famine still struck until the mid-20th century, the assumption that everyone will have something to eat is increasingly built into the rhythm of life.

That assumption, though, leads to complacency*. Famine has ended in much of the world, but it still stalks* parts of Africa — Ethiopia, Mozambique and Zimbabwe, to name three, depend on handouts* of food. And millions of people still suffer from famine's lesser cousin, malnutrition. [X] the UN's Food and Agriculture Organisation* (FAO), some 2 billion of the world's 7.3 billion people do not have enough to eat. Moreover, by 2050, the total population is projected to grow (1) almost 10 billion. Add this to the rising demand for meat, fish, milk and eggs, which is born of prosperity and which requires extra fodder* to satisfy, and 70% more food will be needed in 2050 than was produced in 2009, the year the FAO did the calculation. That is a tall order. But it is not impossible.

Since the time of Thomas Malthus, an economist writing a little over 200 years ago, people have fretted* that population growth would outstrip* food

supply. So far, it has not. But neo-Malthusians* spot worrying signs. One is that in some places the productivity of staples such as rice and wheat has reached a plateau*. Neither new strains* nor fancy agrochemicals are raising yields.

Nor is there much unfarmed land left that is suitable to be brought under^(B) the plough. A source of food Malthus did not foresee was the cultivation of the American prairies*. This, and similar extensions of agricultural land, such as the opening up of the *cerrado** in Brazil, helped the food supply greatly. But such new lands are pretty much used up. Neo-Malthusians also point to climate change. They suggest that, if global temperatures continue to rise, some places will become unfarmable — particularly poor, tropical regions.

These are legitimate concerns. But they can be overcome by two things: the application and dissemination* of technology, and the implementation of sensible government policies.
(d)

Agricultural technology is changing fast. Much of this change is brought^(e) about by rich-world farmers and by affluent farmers in middle-income places like Brazil. Techniques developed in the West — especially genome-based breeding* that can create crops with special properties almost to order — are being adapted to make tropical crops, such as cassava*, hitherto untouched by scientific progress, both more productive and more nutritious. Such smart breeding, in alliance (2) new, precise techniques of genetic modification*, should break through^(f) the yield plateaus. It can also produce crops with properties such as drought- and heat-resistance that will mitigate^(g) the effects of global warming. Drought-resistant maize* created in this way is already (3) the market.

Technology is (4) little use, though, if it is not adopted. In the developing world that applies as much (5) existing farming techniques as it does to the latest advances in genetic modification. Yield plateaus are a phenomenon only of the most intensively farmed parts of the world.

Extending to the smallholders* and subsistence farmers* of Africa and Asia the best of today's agricultural practices, in such simple matters as how much fertilizer* to apply and when, would get humanity quite a long way towards a requisite 70% increase in output. [Y] would things like better roads to ^(h)allow for the carriage of surpluses to markets. This would encourage productivity growth and reduce waste.

Indeed, government policy to reduce waste more generally would make a huge difference. The FAO says that about a third of food is lost during or after harvest. In rich countries a lot of that is thrown away by consumers. In ⁽ⁱ⁾poor ones it does not reach consumers in the first place. Bad harvesting practices, poor storage and slow transport mean that food is damaged, spoiled or lost to pests*. Changing that, which is mostly a question of building things like better, pest-proof grain silos* and monitoring their contents properly, would take another big bite out of the 70% increase.

The neo-Malthusians may throw up their hands (6) despair, but consider this: despite all the apparent obstacles, from yield plateaus to climate change, in the six years following the FAO analysis cereal production rose by 11%. If growth like that continues it should not only be possible to feed the 10 billion, but to feed them well.

[注]

surplus 「余り, 過剰」 lean 「不作の」
complacency 「(ひとりよがりの)安心感」
stalk 「静かに広がる, はびこる」
handouts 「(政府などの)補助」
Food and Agriculture Organisation 「国連食糧農業機関」
fodder 「家畜の飼料」 fret 「(…ということで)気をもむ」
outstrip 「(量・生産などが)上回る」
neo-Malthusian 「新マルサス主義者」(産児制限による人口調整を主張)
plateau 「(景気などの)高原[停滞]状態」 strain 「品種」
prairie 「プレーリー」(北米ミシシッピー川流域やカナダ西部の木のない草原)
cerrado 「セラード」(ブラジル中央部の樹木がまばらな草原地帯)
dissemination 「普及」 breeding 「品種改良」
cassava 「キャッサバ」(熱帯各地の主食デンプン源作物)
genetic modification 「遺伝子組み換え」 maize 「トウモロコシ」
smallholder 「小自作農」 subsistence farmer 「自給自足農業者」
fertilizer 「肥料」 pest 「有害な小動物, 害虫」
silo 「サイロ」(穀物・牧草を貯蔵するための塔状建築物)

(1) 下線部(a)～(i)の各語(句)と最も近い意味の語(句)をそれぞれ1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

(a) yielded

1 decreased

2 failed

3 postponed

4 produced

(b) name

1 gain a succession

2 give examples

3 have a reputation

4 show resemblance

(c) tall

1 appropriate

2 moderate

3 outrageous

4 valuable

(d) sensible

1 inadequate

2 passionate

3 random

4 wise

(e) brought about

1 anticipated

2 avoided

3 detected

4 realized

(f) break through

1 accomplish

2 cause

3 complicate

4 overcome

(g) mitigate

1 achieve

2 enhance

3 reduce

4 secure

(h) output

1 export

2 harvest

3 population

4 technology

(i) thrown away

1 abolished

2 discarded

3 halted

4 recycled

(2) 下線部(A)と(B)の意味に最も近いものをそれぞれ 1 ～ 4 から一つ選び、その番号を解答用マークシートにマークしなさい。

(A)

- 1 it was certain that even people with power could not fill their stomachs
- 2 none of the powerful people were sure of getting their wants
- 3 only people with power were expected to have enough food
- 4 powerful people were not convinced that they could provide others with food

(B)

- 1 can be turned into a populated region
- 2 is fit for cultivation
- 3 is worth being abandoned
- 4 must remain industrialized

(3) 文中の空所(1)～(6)を本文の内容に合うように埋めるのに、最も適切な語をそれぞれ 1 ～ 4 から一つ選び、その番号を解答用マークシートにマークしなさい。

- | | | | | |
|-----|------|--------|-------|--------|
| (1) | 1 by | 2 of | 3 on | 4 to |
| (2) | 1 at | 2 from | 3 on | 4 with |
| (3) | 1 by | 2 off | 3 on | 4 to |
| (4) | 1 at | 2 of | 3 on | 4 with |
| (5) | 1 at | 2 of | 3 off | 4 to |
| (6) | 1 at | 2 by | 3 in | 4 of |

- (4) 文中の空所[X]と[Y]を本文の内容に合うように埋めるのに、最も適切な語(句)をそれぞれ1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

- | | | |
|-----|----------------|-----------------|
| [X] | 1 According to | 2 Because of |
| | 3 Owing to | 4 Regardless of |
| [Y] | 1 Either | 2 Neither |
| | 3 So | 4 Too |

- (5) 本文のタイトルとして最も適切なものを1～4から一つ選び、その番号を解答用マークシートにマークしなさい。

- 1 Climate change and yield plateaus
- 2 Feeding the ten billion
- 3 Genetic modification and food safety
- 4 How to reduce food waste

- (6) 本文の内容に最も近い文をA～E群の1～4からそれぞれ一つ選び、その番号を解答用マークシートにマークしなさい。

A群

- 1 An increasing number of Indians face famines regularly and suffer from starvation.
- 2 Before the modern era, farmers put aside extra crops for times of a good harvest.
- 3 It was not until modern times that gaining enough food became a main concern for people.
- 4 The ratio of American workers labouring on farms was twenty times higher in 1900 compared to that of the present.

B 群

- 1 It is difficult to feed the world's 7.3 billion people, and it is impossible to satisfy the demand to feed 10 billion people in 2050.
- 2 Millions of people in the world experience malnutrition, which produces much more serious health conditions than famines.
- 3 The increased need of food is partly due to affluence, which enables people to consume more meat, fish, milk and eggs.
- 4 The UN's Food and Agriculture Organisation predicts that 70% more food will be required in 2050 than in 1900.

C 群

- 1 Because of climate change that occurs on a global scale, it is more difficult than ever to predict correctly the harvest of rice and wheat.
- 2 Cultivating lands for agriculture, such as cultivating the plain in Brazil, contributes to the food supply, and a lot of promising lands for farming still remain in the Americas.
- 3 It has been a worrying issue for more than 200 years that population growth would exceed the food supply.
- 4 The productivity of rice and wheat has been rising all over the world, and will rise continually at the present rate.

D群

- 1 Agricultural technologies can be used to make crops drought- and heat-resistant as well as making them more productive and more nutritious.
- 2 Farmers in developing countries should focus on improving their traditional farming practices and avoid utilizing genetically modified new crops.
- 3 Smallholders and subsistence farmers in Africa and Asia have adopted the most-advanced, present-day agricultural practices in the use of fertilizer.
- 4 Small measures such as building better roads to carry extra crops to markets will not contribute to the 70% increase of food that is needed by 2050.

E群

- 1 Inadequate storage, slow transport and ineffective harvesting methods in poor countries hinder food from reaching consumers.
- 2 In spite of the government's effort, the goal of an 11% rise of food production had not been achieved by 2009.
- 3 The FAO reports that about 33% of food is wasted after harvest, for which consumers are largely responsible.
- 4 The policy of making secure buildings to store food and recording the amount of food stored is agreed upon by 70% of all nations.

(下書き用紙)

- 3** 以下の各文は下線部 1 ～ 4 のどれか一つに文法・語法上の誤りがあります。その箇所を選び、その番号を解答用マークシートにマークしなさい。

(経営学科は 15 点, ビジネスエコノミクス学科は 10 点)

- (1) Hardly¹ had I arrive at² the station for a business trip when³ I was called back to the office to welcome the new president, who paid an⁴ unexpected visit there.
- (2) The opposition party leader¹ demands that the school curriculum be² led by innovative design and propose to³ increase the education budget considerably⁴.
- (3) Critics no less¹ than artists have broad interests in² blended arts, such as³ the collaboration between the opera and the ballet, and may success in⁴ promoting them.
- (4) Having been studying¹ for the final examination so hard², I find it too tired³ to help train⁴ my brother's soccer team.
- (5) Had it not¹ been for² the support of the local government and the volunteers, the conservation project covering³ a large area would be abandoned⁴ a long time ago.

(下書き用紙)

4 次の各文の()にそれぞれ1～4から最も適切な語(句)を選び、その番号を解答用マークシートにマークしなさい。

(経営学科は30点, ビジネスエコノミクス学科は20点)

(1) A vibrant town could be found along this road many years ago, but today, it is () but abandoned; only the restaurant is left to cater to tourists and motorists.

- 1 all 2 anything 3 none 4 nothing

(2) The government has () many of the old rules, which makes it easier for entrepreneurs to start broadcasting businesses.

- 1 done away with 2 dropped in on
3 looked forward to 4 run out of

(3) Because the office staff are not able to provide the necessary legal advice to our customers () themselves, lawyers have been called in to help them.

- 1 by 2 in 3 of 4 to

(4) Only when my next-door neighbor mentioned the messy state of her garden for the second time, did it () me that she was suspicious of our dog.

- 1 happen to 2 occur on
3 seem 4 strike

(5) I could not make () of the poem we studied in the class, so I spent hours in the library studying the poet and historical events of his time.

- 1 a rule 2 sense 3 the best 4 way

(6) My sister, who is () an optimist, is confident that her volleyball team will win the championship of the district.

- | | |
|------------------|---------------|
| 1 by nature | 2 in question |
| 3 under contract | 4 with care |

(7) The government would save so much money () if they built more earthquake-proof public buildings and secure banks to prevent floods.

- | | |
|-------------------|------------------|
| 1 in the distance | 2 in the extreme |
| 3 in the long run | 4 in the middle |

(8) Environmental activists insist that we should aim to () our household waste by half and recycle most of it within 10 years.

- | | |
|------------------|---------------|
| 1 catch up with | 2 cut down on |
| 3 keep away from | 4 live up to |

(9) I sent my mother birthday wishes two days after her birthday. I should have sent them in time, but (). She was pleased anyway.

- | |
|---------------------------------|
| 1 better late than never |
| 2 make hay while the sun shines |
| 3 time and tide wait for no man |
| 4 when it rains, it pours |

(10) My school did not have a brass band club, so I reluctantly joined a jazz club. This turned out to be (). I met a girl, who later became my wife.

- | | |
|--------------------------|-------------------------|
| 1 a blessing in disguise | 2 a drop in the ocean |
| 3 the last straw | 4 the tip of an iceberg |

