



お

英語問題

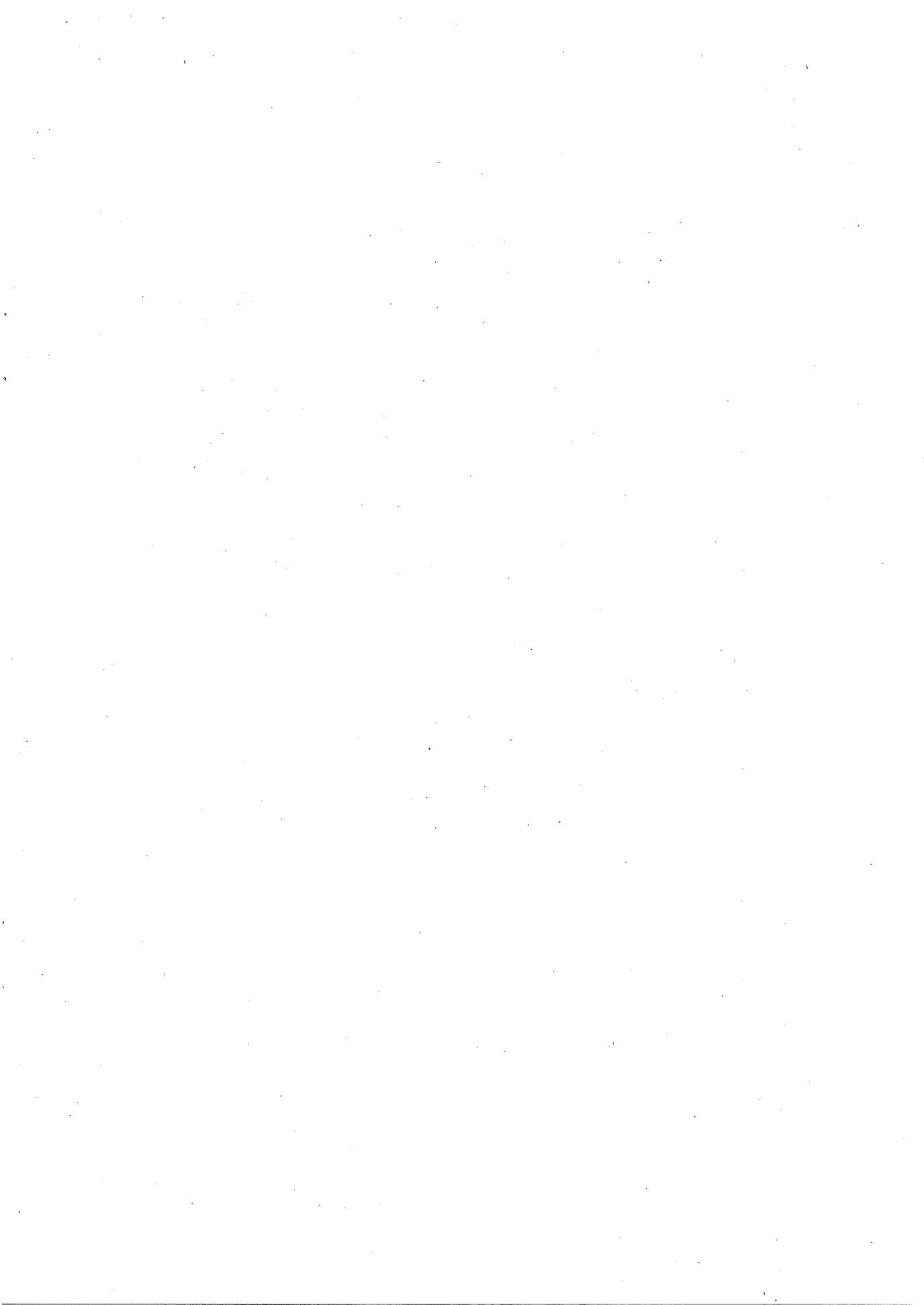
注意事項

はじめに、これを読みなさい。

1. この問題用紙は17ページあります。ただし、ページ番号のない白紙はページ数に含みません。
2. 解答用紙に印刷されている受験番号が正しいかどうか、受験票と照合して確認しなさい。
3. 監督者の指示にしたがい、解答用紙の氏名欄に氏名を記入しなさい。
4. 解答は全て解答用紙の所定欄に記入またはマークしなさい。解答欄は裏にもあります。
5. 1問につき2つ以上マークしないこと。2つ以上マークした場合には、その解答は無効になります。
6. 解答は必ず鉛筆またはシャープペンシル(いずれもHB・黒)で記入しなさい。
7. 訂正する場合は、消しゴムできれいに消し、消しくずを残さないこと。
8. 解答用紙は、絶対に汚したり折り曲げたりしないこと。
9. 解答用紙は持ち帰らず、必ず提出しなさい。
10. 問題用紙は必ず持ち帰ること。
11. 試験時間は70分です。
12. マークシート記入例

良い例	悪い例
	

學天當開
游學聖殿合編



[I] 次の英文を読んで設問に答えなさい。

Sometime in the 16th century, a tree fell over in Borrowdale, England. Under that tree was a rock layer with veins of a dark gray metallic-looking substance. The locals noticed that it looked just like lead, but this was no metal. It was pure carbon. It was graphite.

Chemistry was a young scientific field in the 1500s, so the locals couldn't have known exactly what they found. They did notice one crucial fact about the new material: the graphite made a darker mark on paper than did lead, which had been used since Roman times. So they called it black lead. English people cut graphite into chunks that could be used to write. They then wrapped the graphite chunks in paper or string and sold them on the street. This new tool was called the pencil — a name derived from *pencilum*, the Latin word for a fine brush. Making your mark would never be the same. [I]

History gets a bit uncertain when you go back five centuries, but it is believed that in the 1600s, a woodworker in Keswick, England, first (A) up with the idea of enclosing black lead in wood. A rectangular wooden stick was chopped in half lengthwise. A groove was then cut into one of the halves to make room for a slim stick of black lead. The three pieces — the black lead and the two halves of wood — were glued together with the black lead inside. The result was a rectangular writing implement, the world's first wooden pencil. [II]

This was a big deal. Wood was (B) paper or string, which only covered the fragile graphite. The new pencil, made of cedar and graphite, could be carved and sharpened with a knife as the pencil was used. [III]

By the late 1700s, the old-fashioned lead-alloy stylus pen was hardly used. Other than the pen, which stuck around because of its advantages over the pencil in elegance and permanence, the pencil became the most useful writing tool. [IV] Pencil-makers started calling the center of the pencil simply "lead,"

which is the reason people still talk about pencil “lead” even though the graphite in it is nothing of the sort. Other terms would pop up as well, namely “plumbago,” derived from *plumbum*, the Latin term for lead. This name would stick throughout the 1800s, until people started calling the crystalline carbon substance “graphite,” a word derived from the Greek term *graphein*, meaning “to write.”

The popularity of this new writing utensil, the pencil with its graphite core, made England the world leader in its production. However, events in the 1790s threatened England’s leading position. The Borrowdale mines were running out of graphite. The country went to war with France in 1793. This conflict — a prelude to the Napoleonic Wars — would change the world map and the global ^(c) balance of power, but not before it shook up the pencil industry. At the dawn of the fighting, French trade decreased rapidly, leading to a shortage of pencils and graphite. A year after the war started, French Minister of War Lazare Carnot officially asked scientist and military commander Nicolas-Jacques Conté to find a solution.

At the time, Conté was working on military uses for the newly invented hot air balloon, an effort that cost him his left eye when a balloon experiment resulted in an explosion. Conté had to set the balloon project aside to find a new way to make pencils. That meant either finding a replacement for graphite or developing a suitable mixture of graphite and another substance. The story goes that it took the inventor just a few days to find an answer.

Conté’s mixture had two main ingredients: ground-up graphite and clay. He mixed the two with water and let them harden in rectangular molds so they could be fired in a kiln*. Conté noticed he could manipulate the lightness or darkness of the lead by varying how much clay was used. More clay made for a (ア) pencil lead and a lighter mark on paper; (イ) clay meant a softer lead and a (ウ) mark. To make the wooden part of the pencil, Conté cut a groove out of an entire wooden stick rather than first cutting a piece

of wood in half like the English did. The pencil lead was glued into the groove, and another piece of wood was glued on top of the lead.

Across the Atlantic, Americans had already been experimenting with mixtures of materials because of England's limited graphite supplies and the trade troubles caused by the War of 1812. Americans used all sorts of ingredients. The family of *Walden* author Henry David Thoreau, for instance, mixed graphite with bayberry wax or spermaceti, a wax from sperm whales commonly used to make candles at the time. Thoreau crushed graphite to different sizes to find the right consistency to produce a solid mixture with clay. The result was a pencil lead that was harder and lighter than ever produced. Thoreau was _____ (D) _____ earlier, but it was right on time for the family business. John Thoreau & Company profits soared by the 1840s.

(Adapted from 'The Write Stuff: How the Humble Pencil Conquered the World', *Popular Mechanics*, May, 2018)

*kiln 窯

1. 次の各問の答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) 空欄(A)に入る最も適切なものは次のうちどれか。

- ① came ② ended ③ kept ④ put

(2) 空欄(B)に入る最も適切なものは次のどれか。

- ① as good as ② cheaper than
③ less commonly available than ④ stronger than

- (3) 下線部(C) prelude の具体的な内容に最も近いものはどれか。
- ① A relationship with a particular person, organization, group, etc.
 - ② A short piece of music, especially one played at the beginning of a longer musical piece
 - ③ An action or event that happens before another more important one
 - ④ Something that happens or exists because of something that happened before
- (4) According to the passage, which is the oldest name for what is now known as 'pencil lead'?
- ① Black lead
 - ② Graphite
 - ③ Lead
 - ④ Plumbago
- (5) According to the passage, what was the difference between England and France in the creation of the 'pencil'?
- ① In England, graphite was simply shaped and used, while in France graphite was mixed with spermaceti.
 - ② In France, people used paper or string to wrap graphite sticks, while in England, people used wooden sticks from the beginning.
 - ③ The French crafted wooden pencils from multiple pieces of wood, whereas the English originally used single pieces of wood.
 - ④ The only difference was the amount of graphite: less in England and more in France.

(6) According to the passage, which of the following is true about Nicolas-Jacques Conté?

- ① He was a one-eyed balloonist.
- ② He used bayberry wax in place of graphite.
- ③ He was the first person to glue a small piece of rubber to the end of the pencil.
- ④ He wasted several years in finding an alternative plan.

(7) Which of the following is consistent with the passage?

- ① Graphite was used for making marks in Greek and Roman times.
- ② Henry David Thoreau worked for his family company.
- ③ Nicolas-Jacques Conté continued the balloon project to make pencils.
- ④ The pencil's journey into our hands has been a 200-year process of discovery and invention.

2. 空欄(ア), (イ), (ウ)に入る組み合わせとして最も適切なものは次のうちどれか。

- ① (ア) harder (イ) fewer (ウ) thicker
- ② (ア) harder (イ) less (ウ) darker
- ③ (ア) newer (イ) more (ウ) whiter
- ④ (ア) older (イ) lesser (ウ) darker

3. この英文に次の1文を入れる, 最も適切な場所はどこか。

Thus the phrase "sharpen your pencil" was born.

- ① [I] ② [II] ③ [III] ④ [IV]

4. 空欄(D)には、(ア)から(ク)の語句全てを用いて並び替えた英文が入る。3番目と6番目にくる単語および語句の組み合わせで適当なものを1つ選び、その番号を解答欄にマークしなさい。

(ア) years	(イ) 45	(ウ) what	(エ) had
(オ) out	(カ) figured	(キ) Conté	(ク) rediscovering

- ① 3番目 キ 6番目 オ
- ② 3番目 イ 6番目 カ
- ③ 3番目 ウ 6番目 オ
- ④ 3番目 カ 6番目 ア

〔Ⅱ〕 次の英文を読んで設問に答えなさい。

The idea of 'technological unemployment' is not new, having been mentioned by Keynes (1931). Some experts suggest that the technological change we are experiencing in this 'second machine age' not only risks displacing some specific types of jobs, but could lead to a decline in overall employment. Not only will routine tasks continue to be automated, but cognitive tasks that until recently were considered non-automatable are now at risk, for example, writing standard reports on stock-market changes. Some estimates based on the characteristic tasks of each occupation suggest that in almost half of all jobs in the United States and other advanced countries, computers could (A) people within the next 10 to 20 years.

Critics of these alarming estimates argue that occupations as a whole are unlikely to be automated as there is great variability in the tasks within each occupation. Two workers holding jobs in the same occupation may not perform the same tasks because their work may be organized differently, one requiring more face-to-face interaction or autonomy, for example. At the same time, within most if not all occupations, tasks have already been evolving for a long time.

A better approach to analyzing the number of jobs at risk of automation is to analyze the task content of individual jobs instead of the average task content of all jobs in each occupation. This results in much lower figures for the share of jobs potentially at risk of automation. In a study done by the Organization for Economic Cooperation and Development (OECD) and using workers' reports of the tasks involved in their job from the OECD's Survey of Adult Skills, one research group estimates that an average of just (B) of jobs are at a high risk of being automated, ranging from around (C) of jobs in Austria, Germany and Spain to around 6% or less in Finland and Estonia (Figure 1, striped bar). These are jobs for which at least (D) of the tasks are automatable.

Cross-country differences in the share of workers at high risk of substitution reflect to some extent differences in how work is organized. In countries where jobs (①) (②) on face-to-face interaction, such jobs are at (③) risk of automation. Country differences also reflect the extent to which technology already plays a big role in the economy. Denmark, Japan and Sweden spend a comparatively large percentage of their GDP on ICT investment, signalling that they may well have already automated several tasks or jobs.

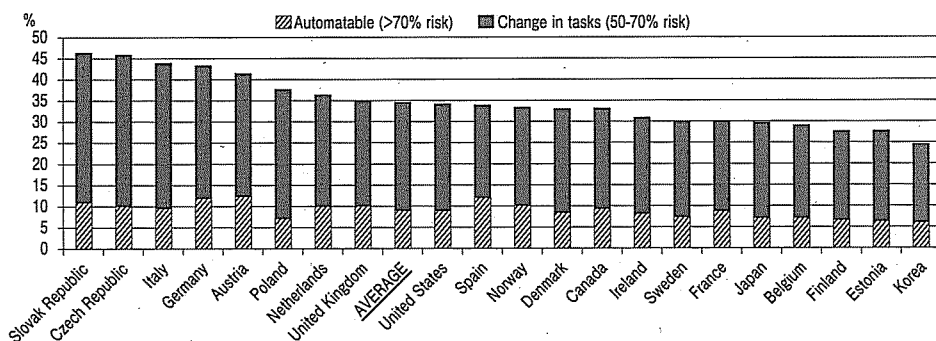


Figure 1. Percentage of workers in jobs at high and medium risk of automation

A larger share of jobs has a low risk of complete automation, but an important share (between 50% and 70%) of automatable tasks. These jobs will not be substituted entirely, but a large share of tasks may be, radically transforming how these jobs are carried out. These jobs will be significantly retooled and workers will need to adapt to the circumstances (Figure 1, black bar).

Across all countries, workers with a lower level of education are at the highest risk of displacement. While 40% of workers with a lower secondary degree are in jobs with a high risk of job automation, fewer than 5% of workers with a university degree are. Thus, automation could prolong existing disadvantages faced by some workers.

(Adapted from 'Automation and Independent Work in a Digital Economy',
Policy Brief on the Future of Work, OECD, May, 2016)

1. 次の各問の答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) 空欄(A)に入る語として最も適切なものは次のうちどれか。

- ① reactivate ② replace ③ reproduce ④ rescue

(2) 空欄(B), (C), (D)に入る組み合わせとして最も適切なものは次のうちどれか。

- ① (B) 9% (C) 12% (D) 70%
② (B) 12% (C) 13% (D) 50%
③ (B) 15% (C) 12% (D) 80%
④ (B) 18% (C) 17% (D) 70%

(3) 下線部(F) adapt の意味に最も近いものは次のどれか。

- ① adhere ② adjust ③ admit ④ adopt

2. 本文の内容について、次の質問に対する最も適切な答を①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) According to the passage, which of the following seems to be true?

- ① Estonia and Norway spend a relatively large portion of their GDP on ICT.
② Not a brand-new idea, technological unemployment had already been pointed out before World War I.
③ Workers with a strong academic background are at less risk of losing their jobs to automation.
④ Some researchers suggest that the structure of management can be divided into more interpersonal and more automated types.

(2) What can be inferred from the passage and Figure 1?

- ① Jobs at medium risk of automation are equally distributed among countries.
- ② Jobs in East Asian countries have already been automated a little more than those in other countries.
- ③ A majority of jobs will likely avoid automation.
- ④ The risk of job loss due to automation is less substantial than sometimes claimed.

(3) Which of the following is the most appropriate for the title of the passage?

- ① How Could Many Jobs Be Replaced?
- ② Digitalization Changes the World of Work in Europe
- ③ Improved Work-Life Balance and Flexibility
- ④ Change in the Share of Employment by Age and Occupation

3. 下線部(E)は「仕事面で、対面式のやりとりに依存する度合いがより少ない国々では、そうした仕事が自動化される危険性がより高くなる。」という意味である。空欄①～③にそれぞれ適当な英語を1語入れなさい。

4. 本文に関連した以下の文章を読んで設問に答えなさい。

A human touch is essential in health care, making jobs such as physician and nurse among the least likely to be replaced by machines. The Information Technology & Innovation Foundation, which ranked more than 800 types of jobs on automation, sees these positions as (a). Computers are increasingly good at making medical diagnoses, but patients don't want to get diagnoses from (b) computers. "They want to get results from a compassionate person who can help them understand and accept often (c) news," MIT researchers Andrew McAfee and Erik Brynjolfsson wrote in their new book, *Machine Platform Crowd*.

(Adapted from 'Robots: Is your job at risk?',
by Matt McFarland, September 15, 2017)

- (1) 空欄(a), (b), (c)に入る最も適切な単語を枠内の①～③から1つずつ選び、その番号を解答欄にマークしなさい。ただし、同じものを2度以上使ってはならない。

① difficult	② impersonal	③ safe
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- (2) According to the passage, which of the following occupations can be considered NOT at the risk of technological unemployment?
- ① Cashiers and toll booth operators at leading international companies
 - ② Fast food jobs at large-scale corporations such as McDonald's
 - ③ Social workers who work with drug users
 - ④ Bus drivers in big cities

〔Ⅲ〕 以下の空欄に入る最も適切なものを①～④の中から1つ選び、その番号を解答欄にマークしなさい。

(1) Ms. Nakano was promoted to the top of the company in only 15 years. What () was that she improved the status of women in the car business.

- ① it ② showing ③ she ④ mattered

(2) Because of a downpour accompanied by thunder last night, () transportation to the small village deep in the mountain is available yet.

- ① a few ② no ③ much ④ new

(3) We still have three days to (), Monday, Tuesday, and Wednesday, so there is enough time to file a report from the last business trip.

- ① come ② do ③ go ④ leave

(4) Well () in syrup, the cherries became so sweet that the children ate them happily.

- ① preserved ② attached ③ beneath ④ known

(5) Whales swim in the ocean and become active at the surface. They can often be seen breaching, or () out of the water and landing with a great splash.

- ① falling ② fishing ③ jumping ④ pulling

(6) They studied very hard; (), they would not have passed the exam.

- ① otherwise ② therefore
③ consequently ④ despite

〔IV〕 次の会話文を読んで設問に答えなさい。

A Cute, Little Crocodile

Keiko, Terry, Miho, and Karlie are on a family vacation somewhere in the mountains of Japan. All four are keen tennis players, and on this particular day they are engaged in a friendly yet spirited match.

Terry: OK, here we go. Set point!

Karlie: Bring it on!

Terry serves to Karlie, who hits a forehand to Keiko. She returns a backhand shot that Miho hits wide.

Terry and Keiko: Yes!

Breathing hard, the four retire to benches for a drink of water and a break.

Miho: So, Dad, you know why you have that cute little guy on your shirt?
(A)

Terry: What?

Miho: OK, (B), Dad. You have somebody on your shirt.

Terry: I do? You mean this little ... what is he, an alligator?

Keiko: Dear, I think he's actually a crocodile.

Terry: I see, my crocodile. No, I have no idea. Maybe he likes tennis?

Keiko (*smiling*): No, that's probably not it. Miho, why don't you (C)?

Miho: OK, Mom, here goes: your shirt, O Sweet Dad, is a Lacoste. He was a French tennis player in the 1920s, when players wore dress shirts, neckties, and long pants.

Karlie: Crazy! How could they play (D)?

Miho: Exactly—they couldn't. Lacoste then borrowed an idea from his buddy, Henri Cochet, who often wore a polo shirt when playing tennis.

Terry: So he decided to use polo shirts? How did he (E) with an alligator on it?

Miho (*shakes her head and rolls her eyes*): Dad, it's a crocodile.
(F)

Terry (*chuckling*): Ah, yes, a croc, not a gator.

Keiko: So tell us more, please.

Miho: Well, he was a strong, aggressive player and he had a long nose.

Karlie: Hey, I know this next part! The suitcase story, right?

Miho ((G)): See, someone listens to my stories, Dad! Yes, there was a suitcase.

Terry: A suitcase?

Karlie: That's right, a suitcase. Lacoste won a bet with another tennis player and received an alligator-skin suitcase. See, it was an alligator at first, but (H) as a crocodile.

Miho: And then Lacoste had a crocodile sewn on his blazer. It became his own personal brand before (I) .

Terry: So that's why I have an alligator on my shirt?

Keiko: Dear, I think it's still a crocodile.

Terry: Gosh, I keep forgetting.

Miho: Dad ... Anyhow, Lacoste retired in 1930 and started a company (J) . About 20 years later the company branched out to the US ^(K) and then later to Japan, and that is why, my dear, forgetful father, you are wearing a crocodile on your shirt. Got that?

Terry: Ah, I see. Thank you, my dear, talented, worldly daughter, for telling me about the ... crocodile ... on my shirt.

Karlie: Great — so shall we take your crocodile back on the court for more tennis?

Keiko: A fine idea. Any bets on this set?

1. Which team won the set before the break?
 - ① Terry and Miho
 - ② Keiko and Terry
 - ③ Miho and Karlie
 - ④ Keiko and Miho

2. Who is the (A) “cute little guy”?
 - ① Miho and Karlie’s baby son
 - ② Lacoste
 - ③ The little alligator
 - ④ The little crocodile

3. Miho (F) “shakes her head and rolls her eyes.” How is she feeling then about her father?
 - ① Impressed
 - ② Impatient
 - ③ Amused
 - ④ Proud

4. Which is closest in meaning to (K) “branched out to the US”?
 - ① developed other types of clothing for a growing market in the US
 - ② sold their business to a US company
 - ③ expanded their business into a new area, the US
 - ④ chose English to help them do business in the US

5. 空欄(B)～(E), (G)～(J)に入る最も適切なものを①～⑧の中から1つ選び, その解答欄に番号をマークしなさい。ただし, 同じものを2度以上使ってはならない。

- ① listen carefully
- ② pats his shoulder fondly
- ③ the press rebranded it
- ④ dressed like office workers
- ⑤ to market his crocodile shirts
- ⑥ enlighten us
- ⑦ wind up
- ⑧ people did that kind of thing

