

英 問

英 語

平成 28 年 度 (前 期)

注 意

1. 「解答はじめ」というまで開いてはいけない。
2. 問題は 1 冊 (本文 12 ページ), 解答用紙は 4 枚である。
3. 全部の解答用紙に受験番号を書くこと。受験番号は次の要領で明確に記入すること。

(例) 受験番号 50001 番の場合 →

5	0	0	0	1
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4. 解答は解答用紙の所定の位置に書くこと。他の所に書くと無効になることがある。解答用紙の裏面は使ってはならない。字数などの指示がある場合は、その指示に従って書くこと。解答文は横書きとする。
5. 書き損じても、かわりの用紙は交付しない。
6. 試験終了後、問題冊子は持ち帰ること。

I 次の英文を読み、下の問いに答えなさい。（*を付した語句には、問題文の末尾に注がある。）

Today, we are confronted with an unprecedented amount of information, and each of us generates more information than ever before in human history. As former Boeing scientist and *New York Times* writer Dennis Overbye notes, this information stream contains “more and more information about our lives — where we shop and what we buy, indeed, where we are right now — the economy, the genomes* of countless organisms we can’t even name yet, galaxies full of stars we haven’t counted, traffic jams in Singapore and the weather on Mars.” That information “tumbles faster and faster through bigger and bigger computers down to everybody’s fingertips, which are holding devices with more processing power than the Apollo mission control*.” Information scientists have measured all this: in 2011, Americans took in five times as much information every day as they did in 1986 — the equivalent of 175 newspapers.

Our brains do have the ability to process the information we take in, but at a cost: we can have trouble separating the trivial from the important, and all this information processing makes us tired. Neurons* are living cells with a metabolism*; they need oxygen and glucose* to survive and when they’ve been working hard, we experience fatigue. Every status update* you read on Facebook, every tweet or text message you get from a friend, is competing for resources in your brain with important things like whether to put your savings in stocks or bonds, where you left your passport, or how best to reconcile with a close friend you just had an argument with.

The speed at which the conscious mind can process information has been estimated at 120 bits per second. That bandwidth is the speed limit for the traffic of information we can pay conscious attention to at any one time. While a great deal occurs below the threshold of our awareness, and this has an impact on how we feel and what our life is going to be like, in order for something to

become part of our experience, we need to have paid conscious attention to it.

What does this bandwidth restriction — this information speed limit — mean in terms of our interactions with others? In order to understand one person speaking to us, we need to process 60 bits of information per second. With a processing limit of 120 bits per second, this means you can barely understand two people talking to you at the same time. Under most circumstances, you will not be able to understand three people talking at the same time. We're surrounded on this planet by billions of other humans, but we can understand only two at a time at the most!⁽³⁾ It's no wonder that the world is filled with so much misunderstanding.

With so many limitations on human attention, it's clear why many of us feel overwhelmed by managing some of the most basic aspects of life. Part of the reason is that our brains evolved to (A) us deal with life during the hunter-gatherer phase of human history, a time when we might encounter no more than a thousand people in our lifetime. Walking around midtown Manhattan, you'll pass that (B) of people in half an hour.

Attention is the most essential mental resource for any organism. It determines which aspects of the environment we deal with, and most of the time, various automatic, subconscious processes make the correct choice about what gets passed through to our conscious awareness. For this to happen, millions of neurons are constantly monitoring the environment to select the most important things for us to focus on. These neurons are collectively called the *attentional filter*. They work mostly in the background, outside of our conscious awareness. This is why we don't notice many little details in our daily lives, or why, when you've been driving on the freeway for several hours, you don't remember much of the scenery: your attentional system "protects" you from registering it because it isn't considered important. This unconscious filter follows certain principles about what it will let through to your conscious awareness.

The attentional filter is one of evolution's greatest achievements. In

⁽⁴⁾

nonhumans, it ensures that they don't get distracted. Squirrels are interested in nuts and predators*, and not much else. Dogs, whose olfactory* sense is one million times more sensitive than ours, use smell to gather information about the world more than they use sound, and their attentional filter has evolved to make that so. If you've ever tried to call your dog while he is smelling something interesting, you know that it is very difficult to catch his attention with sound — smell is a more important sense than sound in the dog brain. No one has yet learned everything about the human attentional filter, but we've discovered a great deal about it.

注 genome ゲノム

Apollo mission control アポロ計画のコントロール・ルーム

neuron 神経細胞

metabolism 新陳代謝

glucose ぶどう糖

status update ソーシャル・ネットワーク上の更新された情報

predator 捕食動物

olfactory 嗅覚の

- 1 下線部(1)を和訳しなさい。
- 2 下線部(2)の理由を文脈に即して具体的に日本語で説明しなさい。
- 3 下線部(3)の理由を文脈に即して具体的に日本語で説明しなさい。
- 4 下線部(4)“attentional filter”がどのように作用するかを本文の論旨に即して80字以内の日本語(句読点を含む)で説明しなさい。

II 次の英文を読み、下の問いに答えなさい。（*を付した語句には、問題文の末尾に注がある。）

Sadly, music instruction in schools everywhere has decreased sharply over recent decades to the extent that an alarming percentage of children and teenagers get little or no music education. Music is often only an optional subject at secondary schools, there are not enough qualified teachers, and it is often seen as the subject that can be cut from the curriculum if there is a shortage of teachers. This is because music is not one of the core subjects, as mathematics, literature, science and foreign languages are. Yet a basic knowledge of music always used to be considered part of a balanced education, just like a basic knowledge of literature or mathematics. And the worst thing about the decline in recent years is that it affects European countries, which have been known for their proud musical tradition, as reflected in the long list of important composers and musicians who form the basis of European music.

That is why I am calling for music to be taught again in schools like
(1) literature, mathematics or biology. This way, listeners can better appreciate music later in life thanks to their schooling, and musicians will be guaranteed educated audiences in the long term. The big reason for raising the status of music in schools, in my opinion, is that music has to be considered one of the basic components of human education, since it can be useful in significantly improving people's quality of life.

Music allows people to have different sensations simultaneously. That would be impossible without music. In and through music, grief and joy, for example, or loneliness and sociability can coexist. Music can mean different things for different people and even different things for the same person at different times. This kind of contrapuntal* experience is important for human existence but would not be possible to the same extent if we did not have music. More than that, music can enrich our lives as it fosters the development of the finest human

qualities in a collective situation.

Music, unlike sports, is not subject to the usual laws of competition; music has to function as a communal* experience. The experiences I've had working with orchestras, in particular the West-Eastern Divan Orchestra*, confirm this assumption⁽²⁾. The young musicians have an advanced knowledge of music, which means they are prepared to listen as a group and make music as a group, even in a very delicate and tricky social context. In the process, they have succeeded in overcoming barriers. Music has taught them not only the possibility but the necessity to listen to other voices. This, in a certain way, is more important than the fundamental democratic right to vote. In music, every voice has a responsibility towards the other, in speed, dynamic and intensity. The difference between just producing beautiful sound and making music is that the latter means striving to create an organic whole of all the different elements⁽³⁾. There should always be a connection between the different elements in music-making, without any separation from the context.

Music is often seen as a way to escape the human condition: hearing music is meant to enable people to take time out from reality. But this is hearing (A) listening. While there is nothing inherently* wrong with that approach, in my opinion, music should be giving us lessons for life (B) helping us to escape when necessary. I myself have had the experience, as a youngster, of playing mature music like Beethoven's later piano sonatas (C) having first come up against the slings and arrows* of life. So my playing was not a product of my life experience. On the contrary, my musical experiences have shown me how to live my life. In the 21st century it is our job to get exactly this point across to people, to show them that they can use what music has taught them to help themselves to live their lives.

注 contrapuntal 対位法的な(対位法とは、複数の旋律を、それぞれの独立性を保ちつつ互いによく調和させて重ね合わせる技法をいう。)

communal 共有の

West-Eastern Divan Orchestra 本講演の講演者であるピアニストで指揮者のダニエル・バレンボイムが、友人で文学批評家の故エドワード・W・サイードとともに、パレスティナ(およびアラブ諸国)とイスラエルの若い音楽家を中心として、1999年に結成したオーケストラ。

inherently 本質的に

slings and arrows さまざまな困難

1 下線部(1)のように主張することによりどのようなメリットがあると筆者は考えているか。100字以内の日本語(句読点を含む)で説明しなさい。

2 下線部(2)の指す内容を50字以内の日本語(句読点を含む)で説明しなさい。

3 下線部(3)を和訳しなさい。

4 空欄(A), (B), (C)に入れる語句の組み合わせとして最も適切なものを以下の選択肢イ~へから一つ選び、その記号を解答欄に書きなさい。

(A) ——— (B) ——— (C)

イ as well as as well as without

ロ as well as without as well as

ハ as well as without without

ニ without as well as as well as

ホ without as well as without

へ without without as well as

Ⅲ 次の1～4のカッコ内の単語を並べ替えて、最も適切で意味の通る文を作り、並べ替えた部分の中で3番目に来る単語を解答欄に書きなさい。ただしカッコ内の単語は、文頭に来るものも含め、すべて小文字にしてある。

1 If freedom is an illusion, it is (cannot / one / you / which / without) live or think.

2 The essence of human beings is (able / be / choose / to / to) how to live.

3 (all / is / that / wanted) is the discovery of the principal human needs.

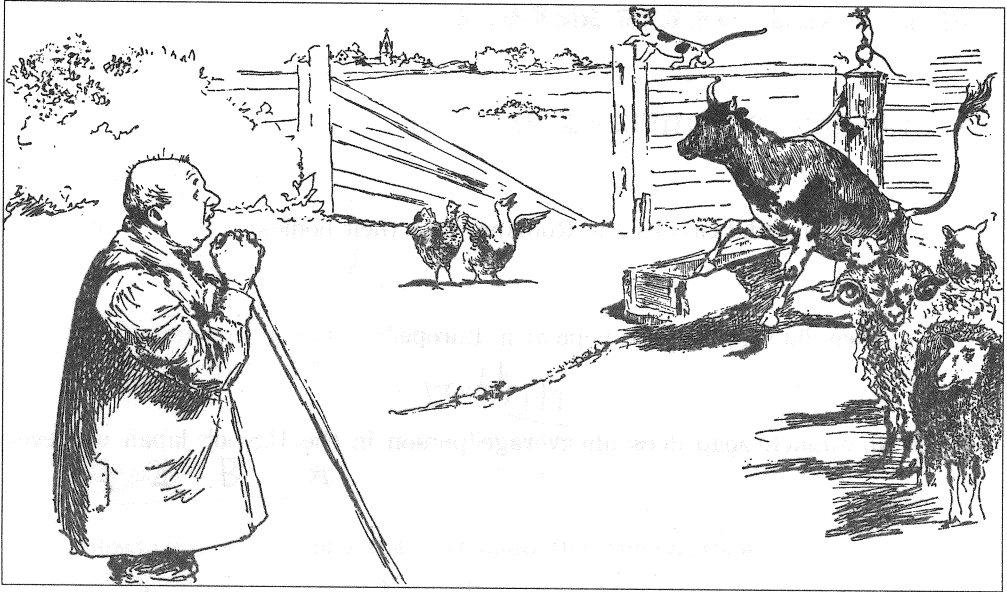
4 (absence / is / it / of / the / wisdom) that ruined Ancient Rome.

IV Choose one picture. Write 100 to 130 words of English about this picture. Indicate the number of the picture that you have chosen. *Correctly* indicate the number of words you have written at the end of the composition.

①



②



③



V 音声を聴き、その指示に従って、AおよびBの各問いに答えなさい。答えに数字が含まれる場合は、算用数字で表記すること。

A 音声を聴き、以下の質問に英語で答えなさい。

- 1 With what did Greeks and Romans wash their bodies?
- 2 When did soap become popular in Europe?
- 3 How much soap does an average person in the U.S. or Japan use every year?

B 音声を聴き，以下の質問に英語で答えなさい。

- 1 When were the earliest recorded lessons at Oxford University?
- 2 For how long would the textbooks at Oxford University have been handwritten?
- 3 How old was Oxford University when the Aztec Empire began?