京都大学

平成26年度入学試験問題

外　国　語

英　語

150点満点

≪配点は，学生募集要項に記載のとおり。≫

（注　意）

1. 問題冊子および解答冊子は係員の指示があるまで開かないこと。
2. 問題冊子は表紙のほかに5ページ，解答冊子は表紙のほかに12ページある。
3. 問題は全部で3題ある（1 ～ 5ページ）。
4. 試験開始後，解答冊子の表紙所定欄に学部名・受験番号・氏名をはっきり記入すること。表紙には，これら以外のことを書いてはならない。
5. 解答は，すべて解答冊子の指定された箇所に記入すること。
6. 解答に関係のないことを書いた答案は無効にすることがある。
7. 解答冊子は，どのページも切り離してはならない。
8. 問題冊子は持ち帰ってもよいが，解答冊子は持ち帰ってはならない。

Ⅱ　次の文章の下線をほどこした部分(1)～(3)を和訳しなさい。　(50 点)

Scientists often ask me why philosophers devote so much of their effort to teaching and learning the history of their field. Chemists typically get by with only a rudimentary knowledge of the history of chemistry, picked up along the way, and many molecular biologists, it seems, are not even curious about what happened in biology before about 1950. My answer is that the history of philosophy is in large measure the history of very smart people making very tempting mistakes, and if you don't know the history, you are doomed to making the same mistakes all over again. (1)That's why we teach the history of the field to our students, and scientists who cheerfully ignore philosophy do so at their own risk. There is no such thing as philosophy-free science, just science that has been conducted without any consideration of its underlying assumptions. The smartest or luckiest of the scientists sometimes manage to avoid the pitfalls quite adroitly (perhaps they are "natural born philosophers" — or are as smart as they think they are), but they are the rare exceptions. (2)Not that professional philosophers don't make — and even defend — the old mistakes too. If the questions weren't hard, they wouldn't be worth working on.

Sometimes you don't just want to *risk* making mistakes; you actually want to make them — if only to give you something clear and detailed to fix. Making mistakes is the key to making progress. Of course there are times when it is really important not to make any mistakes — ask any surgeon or airline pilot. But it is less widely appreciated that there are also times when making mistakes is the only way to go. Many of the students who arrive at very competitive universities pride themselves in not making mistakes — after all, that's how they've come so much farther than their classmates, or so they have been led to believe. I often find that I have to encourage them to *cultivate the habit* of making mistakes, the best learning opportunities of all.

They get "writer's block" and waste hours forlornly wandering back and forth on the starting line. "Blurt it out!" I urge them. Then they have something on the page to work with.

We philosophers are mistake specialists. (3) While other disciplines specialize in getting the right answers to their defining questions, we philosophers specialize in all the ways there are of getting things so mixed up that nobody is even sure what the right *questions* are, let alone the answers. Asking the wrong questions risks setting any inquiry off on the wrong foot. Whenever that happens, this is a job for philosophers! Philosophy — in every field of inquiry — is what you have to do until you figure out what questions you should have been asking in the first place. Some people hate it when that happens. They would rather take their questions off the rack, all nicely tailored and pressed and cleaned and ready to answer. We philosophers have a taste for working on the questions that need to be straightened out before they can be answered. It's not for everyone. But try it, you might like it.

Ⅲ 次の文章の下線をほどこした部分(1)～(3)を和訳しなさい。 (50 点)

How do mathematicians solve problems? There have been few rigorous scientific studies of this question. Modern educational research, based on cognitive science, largely focuses on education up to high school level. (1) Some studies address the teaching of undergraduate mathematics, but those are relatively few. There are significant differences between learning and teaching existing mathematics and creating new mathematics. Many of us can play a musical instrument, but far fewer can compose a concerto or even write a pop song.

When it comes to creativity at the highest levels, much of what we know — or think we know — comes from introspection. We ask mathematicians to explain their thought processes, and seek general principles. One of the first serious attempts to find out how mathematicians think was Jacques Hadamard's *The Psychology of Invention in the Mathematical Field*, first published in 1945. Hadamard interviewed leading mathematicians and scientists of his day and asked them to describe how they thought when working on difficult problems. (2) What emerged very strongly was the vital role of what for lack of a better term must be described as intuition. Some feature of the subconscious mind guided their thoughts. Their most creative insights did not arise through step by step logic, but by sudden, wild leaps.

One of the most detailed descriptions of this apparently illogical approach to logical questions was provided by the French mathematician Henri Poincaré, one of the leading figures of the late nineteenth and early twentieth centuries. Poincaré was adamant that conscious logic was only part of the creative process. Yes, there were times when it was indispensable: deciding what the problem really was, systematically verifying the answer. But in between, Poincaré felt that his brain was often working on the problem without telling him, in ways that he simply could not fathom.

His outline of the creative process distinguished three key stages: preparation, incubation, and illumination. Preparation consists of conscious logical efforts to pin the problem down, make it precise, and attack it by conventional methods. This stage Poincaré considered essential; it gets the subconscious going and provides raw materials for it to work with. Incubation takes place when you stop thinking about the problem and go off and do something else. The subconscious now starts combining ideas with each other, often quite wild ideas, until light starts to dawn. With luck, this leads to illumination: your subconscious taps you on the shoulder and the proverbial light bulb goes off in your mind.

This kind of creativity is like walking a tightrope. (3) On the one hand, you won't solve a difficult problem unless you make yourself familiar with the area to which it seems to belong — along with many other areas which may or may not be related, just in case they are. On the other hand, if all you do is get trapped into standard ways of thinking, which others have already tried, fruitlessly, then you will be stuck in a mental swamp and discover nothing new. So the trick is to know a lot, integrate it consciously, put your brain in gear for weeks . . . and then set the question aside. The intuitive part of your mind then goes to work, rubs ideas against each other to see whether the sparks fly, and notifies you when it has found something. This can happen at any moment: Poincaré suddenly saw how to solve a problem that had been bugging him for months when he was stepping off a bus. Archimedes famously worked out how to test metal to see if it were gold when he was having a bath.

Ⅲ　次の文章(1), (2)を英訳しなさい。　(50 点)

(1)　近年，電子書籍の普及が急速に進んできた。アメリカほどではないが，日本でも，パソコンや耳慣れない機器で文章を読む機会は増える一方である。しかし，中高年層に限らず，紙の本でないとどうも読んだ気がしないという人も多い。論文でも小説でも普通にコンピュータで執筆される時代だけれども，きちんと製本された真新しい本には，何とも言えない味わいがあるらしい。

(2)　きのう通勤帰りの満員電車で揺られていたら，小学生ぐらいの男の子が大きな声を張り上げて車内の人込みをかき分けて走ってきた。子供は頬を真っ赤に染めて，「運転手さん，さっきの駅で降ろしてください！」と叫んでいた。そしてたちまちのうちに私の目の前から姿を消した。忘れ物でもしたのだろうか？だとしたら，あの必死の形相からして，よほど大事なものだったに違いない。

問題は，このページで終わりである。