I 次の英文を読み，下記の設問に答えなさい。

Scientists have long believed that there is a link between body fitness and mental condition. The idea of the "scholar-athlete" goes back to the culture of the ancient Greeks, in which "fitness was almost as important as learning itself," says Harvard University psychiatrist John Ratey. The Greeks, he adds, understood the "mind-body connection" and probably intuited the basic principle that aerobic exercise helps the heart pump more blood to the brain, along with the rest of the body. More blood means more oxygen, and thus better-nourished brain cells. "Exercise can affect cognition, just as it affects muscles," says Charles Hillman.

Recently, however, researchers using sophisticated brain-scanning tools and the latest biochemical theories have come to realize that the mental effects of exercise are far more profound and complex than they once thought. The process starts in the muscles. Every time a muscle contracts and releases, it sends out chemicals, including a protein called IGF-1 that travels through the bloodstream, across the blood-brain barrier and into the brain itself. There, IGF-1 takes on the role of manager in the body's neurotransmitter* factory. It issues orders to increase production of several chemicals, including one called BDNF.

With regular exercise, the body builds up its levels of BDNF, and the brain's nerve cells start to branch out, join together and communicate with each other in new ways. This is the process that underlies learning; every change in the junctions between brain cells signifies a new fact or skill that's been picked up and stowed away for future use. BDNF makes that process possible. Brains with more of it have a greater capacity for knowledge. On the other hand, a brain that's low on BDNF shuts itself off to new information.

Most people maintain fairly constant levels of BDNF in adulthood. But as they age, their individual neurons* slowly start to die off. Until the mid-'90s,

**II** 下記の設問において，各々の英文を完成させるために，それぞれの選択肢1～4の中から空所を埋めるのに最も適したものを選びなさい。

設　問

(1) Mr. Suzuki recently _____ exception to something his colleague said.

1. takes
2. taken
3. took
4. will take

(2) The company decided on the terms and conditions that were advantageous _____ itself.

1. to
2. in
3. for
4. with

(3) It is important to think of the necessary medical precautions when considering _____ to some Third World countries.

1. to go
2. go
3. to going
4. going

(4) When going abroad, it is _____ preferable to carry a credit card or traveler's checks than take lots of cash.

1. very
2. much
3. more
4. most

**Ⅲ** 下記の設問において(　　)内の語句を並べ換えて英文を完成させなさい。そして2番目と6番目にくる最も適したものを一つずつ選びなさい。

設　問

(1) Once　you　( 1 will　find　2 software　3 the　hang　4 I'm sure you　5 get　6 of it　7 that this new) is very useful.

(2) Probably you ( 1 but just to　2 safe I'd　3 could get　4 play it　5 with only　6 along　7 a sweater) take a coat too.

(3) The dean ( 1 effect that　2 will write　3 the necessary credits　4 a letter　5 completed all　6 to the　7 you have) for graduation.

(4) He　worked　hard　( 1 but　finally　2 the　system　3 for　4 and applied for　5 up with　6 he got fed　7 25 years) early retirement.

(5) Notice to our customers: ( 1 of merchandise　2 that all　3 please　4 and no returns　5 are final　6 be informed　7 sales) can be accepted.

(6) We　thought　( 1 accomplished　it　2 to　try　3 but　he　4 he must　5 been　crazy　6 dangerous　jump　7 have　8 such a) successfully.

Ⅳ 次の英文を読み，下記の設問に答えなさい。

Some people say that succeeding in business is a matter of blood, sweat and tears — a statement that many new companies are taking quite literally. They are the firms that specialize in profiting from the use of DNA information: everything from tests for genetic tendency to baldness or obesity,* to determining how foreign matter got into supermarket food. As DNA testing becomes easier and more widespread, it is becoming bigger business. As it does, though, fears are being raised about a potentially ( 1 ) use of highly personal information, and steps are being taken to protect it.

One company, for example, offers a DNA testing service to check whether biological impurities in foods and drugs have ( 2 ) from the company or from the users. This could help the companies avoid costly lawsuits blaming them for making contaminated products. Testing a sample costs a little more than 100,000 yen. The service has been used by beverage makers, department stores and pharmaceutical companies, ( 3 ). Other planned services include beauty treatments tailored to individual customers' hair, weight and other genetic traits, and funeral services that preserve the DNA of the dead person. Also ( 4 ) are plans to develop "order-made" drugs tailored to each patient's gene characteristics in order to reduce the side effects of the medications.

Not everyone, however, is so enthusiastic about the new businesses. "DNA data could be linked to personal information such as medical history, criminal records, race, religion or beliefs, and traded for money or used by consumers ( 5 ) a full understanding of the implications of DNA," cautions Ryuichi Ida, a professor at Kyoto University and expert on bioscience and international laws. In April 2005, the Japanese trade ministry established a set of guidelines on ( 6 ) personal genetic information. They call on firms not

## V 自由英作文問題

下記のテーマについて，英語で自分の考えを述べなさい。書体は活字体でも筆記体でも良いが，解答は所定の位置の範囲内に収めなさい。

In English, write a short essay in which you discuss your ideas about the influence of genetic technology on the medical profession and society.