

平成 19 年度学力検査問題

外 国 語 (英 語①)

	ペ ー ジ	解答用紙枚数
英 語 Ⅱ・リーディング	1 ～ 6	1 枚

解答時間 1 時間 20 分

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注 意 事 項

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1. 試験開始の合図があるまで、この問題冊子の中を見てはいけません。
2. 本冊子のページ数は、上記のとおりである。落丁、乱丁、印刷不鮮明の箇所などがある場合は、申し出ること。
3. 解答はすべて別紙解答用紙のそれぞれの解答欄に記入すること。
4. 解答用紙の指定された欄(2箇所)に、忘れずに、本学の受験番号を記入すること。
5. 試験場内で配布された問題冊子は、試験終了後持ち帰ること。

I 次の英文を読んで下記の設問に答えなさい。（\*印の付いた語句には注があります。）

\*Linc Hawkins was hired by the Bell System's Laboratories in New Jersey in 1942. There he worked on many chemical problems. But he did not find the problems challenging enough. So Linc convinced his supervisor to let him work with plastics. In this area, Linc believed, his training in chemistry and chemical engineering might be put to better use.

At this time, scientists were beginning to consider the use of plastics as \*insulators for electrical cables, including telephone cables. Insulators protect the cables. They keep the electricity in the wires. Up until then, \*lead had been used for this purpose. But lead was expensive, heavy, and in short supply.

Plastics known as \*polyethylenes, however, were lighter than lead. They were also inexpensive, flexible, strong, and \*water-resistant. Some scientists felt that polyethylenes would make very good insulating coatings for electrical cables. But there was a problem. Tests showed that polyethylenes would wear out quickly when used outdoors.<sup>(A)</sup> Exposure to light, heat, and moisture sometimes caused them to \*stiffen and crack. Was there a way to protect polyethylene against the weather?

This is where Linc Hawkins came in. 彼はプラスチックがどのように古くなるのか研究し始めた。<sup>(B)</sup> And he also performed experiments to find ways of keeping the plastics young.<sup>(C)</sup> In other words, Hawkins was looking for a way to protect plastics from light, heat, and exposure to air. Each of these factors speeded up the aging of a plastic.

Hawkins soon realized that the key to keeping plastics young was to mix them with special chemicals. But which chemicals? The answer seemed simple. To keep a plastic safe from light, the plastic should be mixed with a chemical that did not break down when bathed in bright light for a long time. To protect a plastic against heat, the plastic should be mixed with a chemical that stood up to heat. And to keep a plastic from falling apart in air, the

plastic should be mixed with a chemical that \*withstood long-time exposure to air.

Was there a single chemical with all these properties? And, if there were such a chemical, could it be mixed successfully with a plastic? Hawkins knew that such a single, miracle chemical probably did not exist. But there were <sup>(D)</sup> different chemicals that were each strong in one way but not in others. So Hawkins began a search for a combination of chemicals. If he could find the right combination, he would be on the way to making the almost-perfect insulator.

Days stretched into weeks, weeks into months, and months into years as Hawkins worked on his problem. Little by little he began to solve it. First he found a chemical that could protect plastics against oxygen in the air. Then he found a chemical that could protect plastics against light. And finally he found a chemical that helped plastics stand up to heat.

Today, these chemicals <sup>(E)</sup> and others like them make up the plastic that covers billions of kilometers of electrical wires. So the next time you pick up the telephone, stop and think how Linc Hawkins' career has made it easier for your call to reach its destination.

注 Linc Hawkins リンク・ホーキンス(1911~1992; 米国の化学者)  
insulator 絶縁体 lead 鉛  
polyethylene ポリエチレン water-resistant 耐水性の  
stiffen 硬くなる withstand ~に耐える

1. 下線部(A)を日本語に訳しなさい。
2. 下線部(B)の日本語を英語に直しなさい。
3. 下線部(C)の“keeping the plastics young”とは具体的にはどのようなことを指しているか、本文に即して30字以内の日本語(句読点を含む)で説明しなさい。
4. 下線部(D)を日本語に訳しなさい。
5. 下線部(E)の“these chemicals”とはどういうものか、3種類を日本語で書きなさい。

Ⅱ 次の英文を読んで下記の設問に答えなさい。（\*印の付いた語句には注があります。）

Even today in the modern, developed world, surveys show that parents still prefer to have a boy rather than a girl. One \*longstanding reason why boys have been seen as a greater blessing has been that they are expected to become better economic \*providers for their parents' old age. Yet it is time for parents to think again. Girls may now be a better investment.

Girls get better grades at school than boys, and in most developed countries more women than men go to university. Women will thus be better equipped for the new jobs of the 21st century, in which brains count a lot more than \*brawn. In Britain far more women than men are now \*training to become doctors. And (advice, are, likely, more, provide, sound, to, women) on investing their parents' \*nest egg: surveys show that women consistently achieve higher financial \*returns than men do.

Furthermore, the increase in female employment in the rich world has been the main driving force of growth in the past couple of decades. Those women have contributed more to global \*GDP growth than have either new technology or the new giants, China and India. Add the value of housework and child-rearing, and women probably account for just over half of world output. It is true that women still get paid less and few make it to the top of companies, but, as prejudice fades over coming years, women will have great scope to \*boost their productivity — and incomes.

Governments, too, should embrace the potential of women. Women complain (rightly) of centuries of \*exploitation. Yet, to an economist, women are not \*exploited enough: they are the world's most \*under-utilised resource; getting more of them into work is part of the solution to many economic \*woes, including shrinking populations and poverty.

Some people \*fret that if more women work rather than mind their

children, this will boost GDP but create negative social effects, such as a lower birth rate. Yet developed countries where more women work, such as Sweden and America, actually have higher birth rates than Japan and Italy, where women stay at home. Others fear that women's move into the paid labour force can come at the expense of children. Yet the evidence for this is mixed. For instance, a study by Suzanne Bianchi at Maryland University finds that mothers spent the same time, on average, on childcare in 2003 as in 1965. The increase in work outside the home was \*offset by less housework — and less spare time and less sleep.

注 longstanding	長年にわたる	provider	扶養者, 稼ぎ手
brawn	筋力, 腕力	train	訓練を受ける
nest egg	蓄え	returns	収益
GDP(gross domestic product)	国内総生産		
boost	押し上げる, 増大させる	exploitation	搾取
exploit	活用する		
under-utilised	十分に活用されていない		
woes	苦悩, 悩み	fret	いらいらする
offset	相殺(そうさい)する		

1. 下線部(A)のように言われる理由について、本文に即して日本語で簡潔に説明しなさい。
2. 下線部(B)の部分が、「女性のほうが堅実な助言を提供してくれる可能性がより高い」という意味になるように( )内の単語を並べ替えなさい。
3. 下線部(C)を日本語に訳しなさい。
4. 下線部(D)を日本語に訳しなさい。
5. 本文では、現代の社会においてどのような点で女性が男性より優位に立つことができないと述べられているか。日本語で二つ挙げなさい。

Ⅲ 次の英文を読んで下記の設問に答えなさい。（\*印の付いた語句には注があります。）

If you walk up and down a pebbly beach, you will notice that the \*pebbles are not arranged at random. The smaller pebbles typically tend to be found in \*segregated zones running along the length of the beach, the larger ones in different zones or stripes. The pebbles have been \*sorted, arranged, and selected. A tribe living near the shore might wonder at this evidence of sorting or arrangement in the world, and might develop a myth to account for it, perhaps attributing it to a Great Spirit in the sky with a tidy mind and a sense of order. We might give a superior smile at such a \*superstitious notion, and explain that the arranging was really done by the blind forces of physics, in this case the action of waves. The waves have no purposes and no intentions, no tidy mind, no mind at all. They just energetically throw the pebbles around, and big pebbles and small pebbles respond differently to this treatment so they end up at different levels of the beach. A small amount of order has come out of disorder, and no mind planned it.

The waves and the pebbles together constitute a simple example of a system that automatically generates \*non-randomness. The world is full of such systems. 私が考え得る最も単純な例は穴です。 Only objects smaller than the hole can pass through it. This means that if you start with a random collection of objects above the hole, and some force shakes and \*jostles them about at random, after a while the objects above and below the hole will come to be nonrandomly sorted. The space below the hole will tend to contain objects smaller than the hole, and the space above will tend to contain objects larger than the hole. Mankind has, of course, long exploited this simple principle for generating non-randomness, in the useful device known as the \*sieve.

注 pebble 小石	segregated 分離された
sort 分類する	superstitious 迷信的な
non-randomness でたらめでないこと, 秩序	
jostle 荒々しく突く	sieve 篩(ふるい)

1. 下線部(A)の“it”は具体的にどのような内容を指しているか、30字以内の日本語(句読点を含む)で書きなさい。
2. 下線部(B)の“they”が指す語句を本文中より英語のまま抜き出しなさい。
3. 下線部(C)はどのような内容を指しているか、日本語で簡潔に説明しなさい。
4. 下線部(D)の“they”が指す語句を本文中より英語のまま抜き出しなさい。
5. 下線部(E)を日本語に訳しなさい。
6. 下線部(F)の日本語を英語に直しなさい。
7. 下線部(G)は具体的にはどのようなことを指しているか、本文に即して日本語で説明しなさい。