

平成 23 年度学力検査問題

外国語 (英語)

	ページ	解答用紙枚数
英語 II・リーディング	1 ~ 10	1 枚

解答時間 1時間 20分

注意事項

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。）

In the early 1800s, a French scientist named Jean Baptiste de Lamarck was the first scientist to propose a model of how life evolves. He became convinced that the fossil record showed that species had changed over time. He proposed an explanation for evolution based on the idea that an individual ^(A)organism can acquire a new trait during its lifetime and then pass that trait on to its offspring. For example, Lamarck suggested that when giraffes stretched their necks to reach the leaves of tall trees, they passed the result of this stretching — a longer neck — to the next generation. Lamarck was a highly respected scientist, but he was unable to provide any evidence to support his idea.

About 50 years after Lamarck, the British naturalist Charles Darwin published what would become the basis of the modern theory of evolution. As a young adult, Darwin spent 5 years as a naturalist aboard the *Beagle*, a ship in the British navy. As he sailed along the coast of South America, he studied rock formations and collected fossils. He also began to compare the new ^(B)animals he was seeing with ones from his own country.

The differences he saw in animals became more obvious when he visited the Galápagos Islands, a chain of volcanic islands about 950 kilometers off the South American coast. On the 18 Galápagos Islands, plants and animals not only differed from those he saw on the mainland, but some differed from island to island.

Darwin observed several types of tortoises on the islands. Tortoises with short necks were living in damp areas with abundant plant life that grew close to the ground. Longer-necked tortoises were living in dry areas with *cacti. He considered whether the length of their necks made it possible for the tortoises to live in different environments.

Darwin also found many different types of birds called finches living on the islands. Some finches were common in the treetops, while others lived in the lower shrubs of a neighboring island. Among the different islands he noticed a variety of *beak shapes and sizes. Some finches had heavy, short beaks useful for pecking trees or seeds, while others had small, thin beaks that could be used for capturing insects. These observations caused Darwin to wonder if the birds had evolved from similar species.

After Darwin returned home to England in 1836, he spent several years analyzing the observations and specimens he had collected on his voyage. He ^(C) struggled to develop an explanation that would account for the amazing diversity of species he saw and for the relationships between them. By 1844 he had developed a hypothesis based in part on an insight from one of his hobbies — *breeding pigeons.

Darwin knew from personal experience that breeders can produce new varieties of an animal over time. The process breeders use is called artificial ^(D) selection. For example, breeders produce a new *breed of dog by selecting dogs that have certain desired traits and then allowing only those individuals to *mate. From the resulting *litters, they again selectively *breed only the individual dogs with the desired traits. By repeating this process generation after generation, a new breed is produced.

(a similar process / be / Darwin's / going / in / insight / might / ^(E) nature / on / that / was). He proposed that, through a process he called natural selection, members of a species that are best suited to their environment survive and reproduce at a higher rate than other members of the species.

Darwin's personal observations and the work of another scientist, Alfred Wallace, led Darwin to write about this new concept of evolution. In 1859, after more than twenty years of work, Darwin published his ideas in his book *On the Origin of Species*. This work led the way for our modern understanding of how new species arise.

(Life Over Time, 2007)

注

cactus (複数形 cacti) サボテン

beak くちばし

breed (名詞) 品種 / (動詞) 飼育する, 交配させる

mate つがいになる

litter 同じ母親から一緒に生まれた犬や豚などの子たち

1. 下線部 (A) に関して, ラマルクが挙げている具体的な事例を日本語で簡潔に述べなさい。
2. 下線部 (B) を日本語に訳しなさい。
3. 下線部 (C) を日本語に訳しなさい。
4. 下線部 (D) の“artificial selection”とはどのようなものか, 本文中の具体例に即して日本語で説明しなさい。
5. 下線部 (E) が「ダーウィンの洞察は, 同様の過程が自然界で進行しているかもしれないというものであった」という意味になるように, ()内の語句を並べ替えなさい。(文頭は大文字にすること)
6. 本文で述べられているガラパゴス諸島の2種類の亀について, それぞれの身体的特徴と生息している環境を日本語で簡潔に述べなさい。



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。）

Gianluca Vinti has all the *trappings of an Italian *yuppie — a good job teaching math at the University of Perugia, a car, stylish clothes, and, of course, a cellular phone. But in reality, Vinti is a Mamma’s Boy, still living at home at 33 and unashamed of it. “It’s true that life at home is easier,” he says. “I have fewer expenses and my mother still brings me coffee in bed each morning. But I chose to *stay put because my relationship with my family is excellent. Until I see a valid reason for leaving, I’ll stay.”

Vinti’s not home alone. According to figures recently released by ISTAT, the Italian National Statistics Institute, the number of Italian “boys” between the ages of 18 and 34 living with their parents has reached 58%, up from 52% seven years ago. That climbing trend is mirrored across Europe, but almost 30% of Italian men aged 30-34, uniquely, have yet to fly the nest.

While the phenomenon may have strong psychological and cultural roots, the main reason the boys are at home long after they’ve become men is economic. And, it’s not just the boys, either. “In Italy, you move out of your parents’ house when you start your own family,” says Elena Labagnara, 35, of Rome. “If I hadn’t married, I’d still be at home now.” Leaving one’s parents at an early age — that is, before marriage — gives rise to suspicions that something in the family is not working. Labagnara points out that in the Anglo-Saxon world, it’s easier for 18-year-olds to make it on their own because they can get scholarships for school as well as part-time jobs. Many Italian parents discourage their children from working while at university because it may give the impression that they are poor. “The large number of *mammoni*,” as the stay-at-homes are called, “is principally an economic thing,” Labagnara says. “When you’re dependent on someone, you stick around.”

Linda Laura Sabbadini, director of research at ISTAT, traces the causes of

**mammismo* to the fact that more Italians stay longer in school, and that when they get out, they're often looking at prolonged periods of unemployment. There's also a third dimension, which is the changing nature of the Italian family. "It's no longer the authoritarian family of the past," Sabbadini says. "So young people can now enjoy *autonomy within their parents' home." Mamma's Boy Vinti *concur: "I don't feel the need to leave home just to have individual freedom; 私は私のしたいことができるし、帰宅したい時に帰宅できる, living with my family."^(C)

The Italian family has indeed changed, with the birthrate *plummeting to among the lowest in the world, but the mother-son relationship remains as strong as ever. Every Friday in Rome, marketing analyst Federico Rutigliano packs up his laundry and for \$6 sends it by bus nearly 500 km to Bari, his hometown in southern Italy. There his mother washes and irons his Valentino shirts and on Sunday afternoon sends the package back to Rome in time for the next workweek. Says Rutigliano, "Sure it saves me money, but the real reason I do it is because my mother wouldn't have it any other way. It makes her happy to know that she's making my life easier."^(D)

(*Time*, July 14, 1997)

注

trappings 典型的な特徴

yuppie 都市(近郊)に住む高学歴・高収入の若い世代の人

(young urban professional の頭文字に -pie を付したものの)

stay put 同じところにとどまる

mammismo 母親が男の子を溺愛し、息子も母親から自立できない親子関係

autonomy 自由裁量権

concur 賛成する

plummet 急落する

1. 下線部 (A) の“*That climbing trend*”とはどういうことか、本文に即して日本語で簡潔に説明しなさい。
2. 下線部 (B) を日本語に訳しなさい。
3. 下線部 (C) の日本語を英語に直しなさい。
4. 下線部 (D) の“*it*”が指示する内容を日本語で簡潔に述べなさい。
5. イタリアにおける“*mammismo*”について、Linda Laura Sabbadini 氏がその原因として考えているものを、3つ日本語で簡潔に述べなさい。

四 は次頁へつづく



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 we don't know why we can't sleep, it's in part because we don't really know why we need to sleep in the first place. We know we miss it if we don't have it. And we know that no matter how much we try to resist it, sleep conquers us in the end. ^(A) We know that seven to nine hours after giving in to sleep, most of us are ready to get up again, and 15 to 17 hours after that we are tired once more. We have known for 50 years that we divide our *slumber between periods of deep-wave sleep and what is called rapid eye movement (REM) sleep, when (active / as / as / awake / is / the brain / we're / when), ^(B) but our voluntary muscles are *paralyzed. We know that all mammals and birds sleep. A dolphin sleeps with half its brain awake so it can remain aware of its underwater environment. When *mallard ducks sleep in a line, the two outermost birds are able to keep half of their brains alert and one eye open to guard against *predators. Fish, reptiles, and insects all experience some kind of repose too.

All this *downtime comes at a price. ^(C) An animal must lie still for a great stretch of time, during which it is easy prey for predators. What can possibly be the *payback for such risk? “If sleep doesn't serve an absolutely vital function,” the renowned sleep researcher Allan Rechtschaffen once said, “it is the greatest mistake evolution ever made.”

The predominant theory of sleep is that the brain demands it. This idea derives in part from common sense — whose head doesn't feel clearer after a good night's sleep? But the trick is to confirm this assumption with real data. How does sleeping help the brain? ^(D) The answer may depend on what kind of sleep you are talking about. Recently, researchers at Harvard led by Robert Stickgold tested *undergraduates on various *aptitude tests, allowed them to nap, then tested them again. They found that those who had engaged in REM

sleep subsequently performed better in pattern recognition tasks, such as grammar, while those who slept deeply were better at memorization. Other researchers have found that the sleeping brain appears to repeat a pattern of neuron firing that occurred while the *subject was recently awake, as if in sleep the brain were trying to commit to long-term memory what it had learned that day.

Such studies suggest that memory *consolidation may be one function of sleep. Giulio Tononi, a noted sleep researcher at the University of Wisconsin, Madison, published an interesting *twist on this theory a few years ago: His study showed that the sleeping brain seems to weed out redundant or unnecessary *synapses or connections. So the purpose of sleep may be to help us remember what's important, by letting us forget what's not.

(National Geographic, May 2010)

注

slumber 眠り, まどろみ	paralyze 麻痺させる, しびれさせる
mallard duck マガモ	predator 捕食動物
downtime 停止時間	payback 見返り
undergraduate 学部学生	aptitude 適性
subject 被験者	consolidation 定着
twist 予想外の進展	synapse シナプス(神経細胞の接続部)

1. 下線部(A)を, it が何を指すかを明らかにして, 日本語に訳しなさい。
2. 下線部(B)が「脳は起きているときと同じくらい活発である」という意味になるように, ()内の語句を並べ替えなさい。
3. 下線部(C)の“at a price”とは具体的にどういうことか, 日本語で簡潔に述べなさい。
4. 下線部(D)に関して, Robert Stickgold 氏が率いる研究者たちは, 睡眠と脳の働きに関するどのような実験結果を得たか, 2種類の睡眠に分けて日本語で簡潔に述べなさい。
5. 下線部(E)を日本語に訳しなさい。