新航道 NEW CHANNEL

9分达人
雅思阅读真题还原

王毅 编著

2010年–2007年7套最新阅读真题

◎ 与最新题库原文一字不差！
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2010.7.31
Optimism and Health

2010.8.5
William Gilbert and Magnetism

2010.4.10
The Sweet Scent of Success
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2010.3.6
Wonder Plant
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2010.1.30
How to spot a liar?
Being Left-handed in a Right-handed World

2009.11.19
A New Ice Age

中国出版集团
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代　序

雅思满分之路

很多人经常问我雅思是怎样考到满分的，其实这个问题就像如何把英语学好一样难以回答。把雅思考到满分，正如英国剑桥大学雅思考试委员会官方所描述的那样，必须具备专家级也就是 Native Speaker 的英语实力。所以这里我还是谈谈我是如何学好英语的，并和大家分享一些准备雅思考试的小经验、小技巧。

第一阶段：建立标准的英语发音体系

其实最初我的英语基础非常差，因为我高中学习的是日语。进入大学以后，由于受到日语发音的影响，我的英语发音很不标准，语法也是错误百出，这让我非常焦急。为了能学好英文，我积极参加了大量英语活动，其中获益最大的是参加了学校的英语演讲比赛。经过层层筛选，最终全校两万多名学生中只有 8 名晋级决赛，我便是其中之一。为了准备这场比赛，我对自己进行了为期两个月的集训。因为英语演讲对语音的要求颇高，所以语音训练当然是最重要的。每天早上 8 点我便开始语音训练，从口腔嘴形训练到段落连读训练，一直持续到晚上 10 点结束。两个月的集中训练下来，我的英语发音有了长足的进步，基本上可以堪称 Native Speaker 的发音水平了。

现在回想起来，这段经历为我的英语学习打下了坚实的基础，同时也培养了我学习英语的信心和兴趣。在这个阶段，有两点经验是很受用的：一是要有持续的练习时间，1 个月、2 个月都可以，在这期间一定要精力集中、专项突破；二是最好要有志同道合的伙伴，一个好的 partner 不仅能帮你发现错误，还能帮你把如此高强度的训练坚持下去。

第二阶段：扩充词汇量

如果发音是建筑一座大厦的地基，那么词汇就是建筑材料。大学二年级的时候，我因为准备考 GRE 和托福而背了大量词汇。当时我买了十几本不同的词汇书，有 A—Z 编排的、词根词缀的、分类词汇的等等，只要有时间就会拿出一本来翻看。词汇积累是漫漫英语学习路中最枯燥的一段，走好这段路既需要毅力，也需要苦中求乐的积极心态，同时还要根据自身特点寻找记忆技巧。这十几本词汇书的内容其实相差不多，对我个人而言，不同的排版设计、不同的词汇顺序给了我不同的记忆刺激。到了后期，寻找不同词汇书中词汇解释的差别也成了我的小乐趣。

除了词汇书，我还专程跑到北京王府井外文书店购置了大量的外文原版小说，以及韦氏红、黄、黑、蓝等多本字典。注意是原版图书！这并不是说我只认国外的牌子，而是只有原版书籍才能保证学习材料的正确性，这一点很重要。通过阅读这些书籍，我积累了大量英文素材，巩固了相对生疏的词汇，还渐渐学会了欣赏这种语言的妙词佳句之美。

第三阶段：提高英语听说能力

大三那年考完 GRE 之后，我开始在一个培训学校教授 GRE 逻辑分析，也因此积累了人生第一桶金，用自己的钱买了一台 DVD 机和海量的 DVD 电影。不久非典来袭，大多数高校处于隔离与被隔离的恐慌之中，培训学校也纷纷歇业，此时的我无所适从，只能以看电影学英语消磨时间。也就是在这个时候，我吸收消化了大量优秀的英文电影和电视剧，例如《老友记》、《急诊室的故事》等等。DVD 电影有个好处，就是可以调字幕。我在看电影的时候必定调出英文字幕，边看字幕边听，一旦遇到不认识的单词，就立刻暂停查单词，久而久之便积累了大量口语词汇，也习惯了英语口语表达的方式，同时还提高了听力。在这期间有一点很重要，对于想说地道英语的同学来说更是不可忽视，那就是“模仿”。看《老友记》时，经常是里面的人物说一句话，我就默默地或小声地重复一遍。现在总结起来，我认为学习英语的天赋无外乎两个基本能力：好的记忆力和模仿能力。

以上这三个阶段是我学习英语过程中最为重要的阶段，之后的出国留学无非是锦上添花。当时我出国考的是GRE和托福，因此回国重新投入英语教育之后，我决定亲自考一下雅思。2007年3月31日，我第一次参加雅思考试，得到了总分9分（听力9分，阅读9分，写作8分，口语9分）的分数。

要想考到9分，首先在听力考试中就要全神贯注，认真听懂每一句话，然后回答每一个问题。雅思听力其实很简单，只要能听懂，题目一般能做对，唯一的障碍可能就是分神没听清或是拼写错误。雅思听力中混杂了英音和美音，有时还可能带点儿澳洲口音，某些连读和发音习惯需要我们仔细辨别。但雅思听力文章有个显著特点，那就是生活化。因此，针对相应的生活场景，我们有机会就要进行生活化语言的听力训练。

阅读部分对中国考生来说从来都不是最困难的，毕竟数年的英语教育都是基于阅读理解、完形填空而进行的。我在考试时也没有使用任何技巧，就是先花时间看懂文章，然后按照顺序逐个攻破每一道题，需要的时候再回到文章中去寻找相关信息来确认答案。雅思阅读的终极境界不是使用各种答题技巧去做题，而是能够做到真正的阅读并理解。

当时口语考到9分的经验可以跟大家进行独家分享。当时，第一部分的基本情况回答一切顺利，第二部分口语卡片要求谈论一个音乐或艺术作品。我选择了讲音乐，因为对艺术作品知之甚少，如果讲艺术作品就是给自己找麻烦。但是讲音乐的话，中国考生又都讲得太相似，如果和大多数人讲得一样就很难得到理想的分数，于是我当时决定要讲得独特一点，打算“think outside the box”。当时我讲道，“Speaking of music, I really enjoy listening to religious music...（我喜欢的是宗教音乐……）”，而且还运用了非常好的句式，例如“Whenever I listen to music, I feel like lifted up to heaven and drawn close to God. It gives peace to my mind and joy to my soul.”讲完之后我非常高兴，自认为讲得不错。但是进入到第三部分我就崩溃了，因为考官根据我的表述开始问一些具有思考性的问题。天啊！有些问题用中文我都不知道该怎么回答。当时第一个问题是“Who do you think contribute more to the society, musicians

or professionals?”这是个社会性议题，如果两个辩论队对此展开辩论，估计一个钟头之后也未必能给出结论，我一介草民又该如何作答？此时只好跟考官大打太极拳：“That’s a very good question. But I’ve never thought about this question before. And I know that if you look at this question from different perspectives, you may have different answers. Well, I’m not really sure. Thank you.”考官意犹未尽继续追问，越问越深入，我当时没有办法，只好坦白交代：我不是这方面的专家，我不知道，我真的不知道……考试结束离开考场之后，我懊悔郁闷不已，以为这次肯定考砸了，估计最多也就是个7分。但是成绩下来之后却是9分。之后通过和许多同事探讨以及后来又陆续参加了大量雅思考试，我发现雅思口语考试更重要的是考查考生的英语表达能力，而非此人社会知识的多少深浅，所以只要语言本身出色就能得到理想的分数，这就像我经常说的：“What you say doesn’t really matter. What really matters is how and how well you say that.”

讲了这么多，其实无外乎在给广大考生传达这样一个信息，英语实力的造就绝非一朝一夕之事，但是也不乏事半功倍的好方法。虽说 Practice makes perfect，但是 practice 并不是唯一的 key，就像武林之中的高手分为两种：一为天资聪颖，勤学苦练者；二为资质欠佳，却得高人指点或偶获武林秘笈者。希望广大考生都能找到自己的“武林秘笈”并勤以研习，实现自己的理想和目标。

王毅

2010 年 8 月于北京

关于本书

剑桥雅思全真试题系列 1-7（亦简称为剑 1-7）自 1996 年陆续出版以来已成为国内雅思培训界不可或缺的经典教材之一。虽然此系列教材非常经典，但是所收录题目大多为剑桥雅思考试委员会早已弃之不用的老题。尽管该委员会竭力每隔 1-3 年更新一本新书，但是仍然远远难以满足广大考生和培训届对雅思考试最前沿信息的需求。于是在这个需求的推动下，笔者研究了 2007-2010 雅思阅读考试的最新趋势，加之笔者自身的考试经验编写了本书。本书汇集了 21 篇与 2007-2010 年雅思 A 类阅读考试完全一致的真题文章和题目，并提供正确答案和参考译文。笔者希望本书能够成为广大雅思考生最有效、最直接的复习材料，并祝愿广大考生早日考出理想成绩，实现留学梦想。

9 分达人温馨提示：如果你在考试中恰好遇到本书收录的某篇文章，请按捺住内心的激动细心把题答完。

本书所收集文章及对应考试日期一览

Test 1

威廉·吉尔伯特与磁场学	2007年1月20日	2007年9月20日	2010年8月5日
2003年酷夏	2007年9月20日	2009年1月10日	2009年3月28日
业余自然爱好者	2007年12月13日		

Test 2

如何识破说谎者	2007年3月31日	2009年3月21日	2010年1月30日
在右撇子世界里做左撇子	2010年1月30日		
苏联人的新工作制	2009年2月7日	2009年4月30日	

Test 3

示例学习法	2007年11月17日	2009年2月7日	
新冰川时代	2007年7月14日	2007年10月13日	2009年2月7日
	2009年9月26日	2009年11月19日	
作物指南	2007年9月20日		

Test 4

莫扎特效应	2007年12月13日	2009年3月14日	
蚂蚁和橘子	2007年9月1日		
音乐：我们共同的语言	2007年9月1日		

Test 5

神奇的植物	2009年4月25日	2010年3月6日	
儿童文学	2008年10月23日	2010年3月6日	
滑石粉	2010年3月6日		

Test 6

成功的芬芳	2010年4月10日		
卡里尔夫人和石炭酸球	2010年4月10日		
交流的方式与冲突	2010年4月10日		

Test 7

新西兰海藻	2007年10月25日	2008年8月9日	2009年8月8日
乐观与健康	2007年4月21日	2008年2月23日	2010年7月31日
哥伦比亚大交换	2007年3月31日		

目 录

Test 1

READING PASSAGE 1

*You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 on the following page.*

Questions 1-7

Reading passage 1 has seven paragraphs **A-G**.

Choose the correct heading for each paragraph from the list of headings below.

*Write the correct number **i-x** in boxes 1-7 on your answer sheet.*

List of Headings	
i	Early years of Gilbert
ii	What was new about his scientific research method
iii	The development of chemistry
iv	Questioning traditional astronomy
v	Pioneers of the early science
vi	Professional and social recognition
vii	Becoming the president of the Royal Science Society
viii	The great works of Gilbert
ix	His discovery about magnetism
x	His change of focus

1 Paragraph **A**
2 Paragraph **B**
3 Paragraph **C**
4 Paragraph **D**
5 Paragraph **E**
6 Paragraph **F**
7 Paragraph **G**

William Gilbert and Magnetism

A 16th and 17th centuries saw two great pioneers of modern science: Galileo and Gilbert. The impact of their findings is eminent. Gilbert was the first modern scientist, also the accredited father of the science of electricity and magnetism, an Englishman of learning and a physician at the court of Elizabeth. Prior to him, all that was known of electricity and magnetism was what the ancients knew, nothing more than that the lodestone possessed magnetic properties and that amber and jet, when rubbed, would attract bits of paper or other substances of small specific gravity. However, he is less well-known than he deserves.

B Gilbert's birth predated Galileo. Born in an eminent local family in Colchester county in the UK, on May 24, 1544, he went to grammar school, and then studied medicine at St. John's College, Cambridge, graduating in 1573. Later he traveled in the continent and eventually settled down in London.

C He was a very successful and eminent doctor. All this culminated in his election to the president of the Royal Science Society. He was also appointed the personal physician to the Queen (Elizabeth I), and later knighted by the Queen. He faithfully served her until her death. However, he didn't outlive the Queen for long and died on December 10, 1603, only a few months after his appointment as personal physician to King James.

D Gilbert was first interested in chemistry but later changed his focus due to the large portion of mysticism of alchemy involved (such as the transmutation of metal). He gradually developed his interest in physics after the great minds of the ancient, particularly about the knowledge the ancient Greeks had about lodestones, strange minerals with the power to attract iron. In the meantime, Britain became a major seafaring nation in 1588 when the Spanish Armada was defeated, opening the way to British settlement of America. British ships depended on the magnetic compass, yet no one understood why it worked. Did the pole star attract it, as Columbus once speculated; or was there a magnetic mountain at the pole, as described in *Odyssey*, which ships would never approach, because the sailors thought its pull would yank out all their iron nails and fittings? For nearly 20 years William Gilbert conducted ingenious experiments to understand magnetism. His works include *On the Magnet and Magnetic Bodies, Great Magnet of the Earth.*

E Gilbert's discovery was so important to modern physics. He investigated the nature of magnetism and electricity. He even coined the word "electric". Though the early beliefs of magnetism were also largely entangled with superstitions such as that rubbing garlic on lodestone can neutralize its magnetism, one example being that sailors even believed the smell of garlic would even interfere with the action of compass, which is why helmsmen were forbidden to eat it near a ship's compass. Gilbert also found that metals can be magnetized by rubbing materials such as fur, plastic or the like on them. He named the ends of a magnet "north pole" and "south pole". The magnetic poles can attract or repel, depending on polarity. In addition, however, ordinary iron is always attracted to a magnet. Though he started to study the relationship between magnetism and electricity, sadly he didn't complete it. His research of static electricity using amber and jet only demonstrated that objects with electrical charges can work like magnets attracting small pieces of paper and stuff. It is a French guy named du Fay that discovered that there are actually two electrical charges, positive and negative.

F He also questioned the traditional astronomical beliefs. Though a Copernican, he didn't express in his quintessential beliefs whether the earth is at the center of the universe or in orbit around the sun. However he believed that stars are not equidistant from the earth, but have their own earth-like planets orbiting around them. The earth is itself like a giant magnet, which is also why compasses always point north. They spin on an axis that is aligned with the earth's polarity. He even likened the polarity of the magnet to the polarity of the earth and built an entire magnetic philosophy on this analogy. In his explanation, magnetism was the soul of the earth. Thus a perfectly spherical lodestone, when aligned with the earth's poles, would wobble all by itself in 24 hours. Further, he also believed that suns and other stars wobble just like the earth does around a crystal core, and speculated that the moon might also be a magnet caused to orbit by its magnetic attraction to the earth. This was perhaps the first proposal that a force might cause a heavenly orbit.

G His research method was revolutionary in that he used experiments rather than pure logic and reasoning like the ancient Greek philosophers did. It was a new attitude toward scientific investigation. Until then, scientific experiments were not in fashion. It was because of this scientific attitude, together with his contribution to our knowledge of magnetism, that a unit of magneto motive force, also known as magnetic potential, was named Gilbert in his honor. His approach of careful observation and experimentation rather than the authoritative opinion or deductive philosophy of others had laid the very foundation for modern science.

Questions 8-10

Do the following statements agree with the information given in Reading Passage 1?

In boxes 8-10 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

8 He is less famous than he should be.

9 He was famous as a doctor before he was employed by the Queen.

10 He lost faith in the medical theories of his time.

Questions 11-13

*Choose **THREE** letters **A-F**.*

Write your answers in boxes 11-13 on your answer sheet.

Which **THREE** of the following are parts of Gilbert's discovery?

A Metal can be transformed into another.

B Garlic can remove magnetism.

C Metals can be magnetized.

D Stars are at different distances from the earth.

E The earth wobbles on its axis.

F There are two charges of electricity.

READING PASSAGE 2

You should spend about 20 minutes on ***Questions 14-26*** *which are based on Reading Passage 2 below.*

IT WAS the summer, scientists now realise, when global warming at last made itself unmistakably felt. We knew that summer 2003 was remarkable: Britain experienced its record high temperature and continental Europe saw forest fires raging out of control, great rivers drying to a trickle and thousands of heat-related deaths. But just how remarkable is only now becoming clear.

The three months of June, July and August were the warmest ever recorded in western and central Europe, with record national highs in Portugal, Germany and Switzerland as well as in Britain. And they were the warmest by a very long way. Over a great rectangular block of the earth stretching from west of Paris to northern Italy, taking in Switzerland and southern Germany, the average temperature for the summer months was 3.78°C above the long-term norm, said the Climatic Research Unit (CRU) of the University of East Anglia in Norwich, which is one of the world's leading institutions for the monitoring and analysis of temperature records.

That excess might not seem a lot until you are aware of the context — but then you realise it is enormous. There is nothing like this in previous data, anywhere. It is considered so exceptional that Professor Phil Jones, the CRU's director, is prepared to say openly — in a way few scientists have done before — that the 2003 extreme may be directly attributed, not to natural climate variability, but to global warming caused by human actions.

Meteorologists have hitherto contented themselves with the formula that recent high temperatures are "consistent with predictions" of climate change. For the great block of the map — that stretching between 35-50N and 0-20E — the CRU has reliable temperature records dating back to 1781. Using as a baseline the average summer temperature recorded between 1961 and 1990, departures from the temperature norm, or "anomalies", over the area as a whole can easily be plotted. As the graph shows, such is the variability of our climate that over the past 200 years, there have been at least half a dozen anomalies, in terms of excess temperature — the peaks on the graph denoting very hot years — approaching, or even exceeding, 2°C. But there has been nothing remotely like 2003, when the anomaly is nearly four degrees.

"This is quite remarkable," Professor Jones told *The Independent*. "It's very unusual in a statistical sense. If this series had a normal statistical distribution, you wouldn't get this number. The return period [how often it could be expected to recur] would be something like one in a thousand years. If we look at an excess above the average of nearly four degrees, then perhaps nearly three degrees of that is natural variability, because we've seen that in past summers. But the final degree of it is likely to be due to global warming, caused by human actions."

The summer of 2003 has, in a sense, been one that climate scientists have long been expecting. Until now, the warming has been manifesting itself mainly in winters that have been less cold than in summers that have been much hotter. Last week, the United Nations predicted that winters were warming so quickly that winter sports would die out in Europe's lower-level ski resorts. But sooner or later the unprecedented hot summer was bound to come, and this year it did.

One of the most dramatic features of the summer was the hot nights, especially in the first half of August. In Paris, the temperature never dropped below 23°C (73.4°F) at all between 7 and 14 August, and the city recorded its warmest-ever night on 11-12 August, when the mercury did not drop below 25.5°C (77.9°F). Germany recorded its warmest-ever night at Weinbiet in the Rhine valley with a lowest figure of 27.6°C (80.6°F) on 13 August, and similar record-breaking night-time temperatures were recorded in Switzerland and Italy.

The 15,000 excess deaths in France during August, compared with previous years, have been related to the high night-time temperatures. The number gradually increased during the first 12 days of the month, peaking at about 2,000 per day on the night of 12-13 August, then fell off dramatically after 14 August when the minimum temperatures fell by about 5°C. The elderly were most affected, with a 70 per cent increase in mortality rate in those aged 75-94.

For Britain, the year as a whole is likely to be the warmest ever recorded, but despite the high temperature record on 10 August, the summer itself — defined as the June, July and August period — still comes behind 1976 and 1995, when there were longer periods of intense heat. At the moment, the year is on course to be the third-hottest ever in the global temperature record, which goes back to 1856, behind 1998 and 2002, but when all the records for October, November and December are collated, it might move into second place, Professor Jones said. The 10 hottest years in the record have all now occurred since 1990. Professor Jones is in no doubt about the astonishing nature of European summer of 2003. "The temperatures recorded were out of all proportion to the previous record," he said. "It was the warmest summer in the past 500 years and probably way beyond that. It was enormously exceptional."

His colleagues at the University of East Anglia's Tyndall Centre for Climate Change Research are now planning a special study of it. "It was a summer that has not been experienced before, either in terms of the temperature extremes that were reached, or the range and diversity of the impacts of the extreme heat," said the centre's executive director, Professor Mike Hulme.

"It will certainly have left its mark on a number of countries, as to how they think and plan for climate change in the future, much as the 2000 floods have revolutionised the way the Government is thinking about flooding in the UK. "The 2003 heatwave will have similar repercussions across Europe."

Questions 14-19

Do the following statements agree with the information given in Reading Passage 2?

In boxes 14-19 on your answer sheet write

YES	*if the statement agrees with the information*
NO	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

14 The average summer temperature in 2003 is almost 4 degrees higher than the average temperature of the past.

15 Global warming is caused by human activities.

16 Jones believes the temperature variation is within the normal range.

17 The temperature is measured twice a day in major cities.

18 There were milder winters rather than hotter summers before 2003.

19 Governments are building new high-altitude ski resorts.

Questions 20-21

*Answer the questions below using **NO MORE THAN TWO WORDS** from the passage for each answer.*

Write your answers in boxes 20-21 on your answer sheet.

20 What are the other two hottest years in Britain besides 2003?

21 What will also influence government policies in the future like the hot summer in 2003?

Questions 22-25

*Complete the summary below using **NO MORE THAN TWO WORDS** from the passage.*

Write your answers in boxes 22-25 on your answer sheet.

The other two hottest years around globe were **22** _____. The ten hottest years on record all come after the year **23** _____. This temperature data has been gathered since **24** _____. Thousands of people died in the country of **25** _____.

Question 26

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answer in box 26 on your answer sheet.

Which one of the following can be best used as the title of this passage?

A Global Warming
B What Caused Global Warming
C The Effects of Global Warming
D That Hot Year in Europe

READING PASSAGE 3

*You should spend about 20 minutes on **Questions 27-40** which are based on Reading Passage 3 below.*

Amateur Naturalists

From the results of an annual Alaskan betting contest to sightings of migratory birds, ecologists are using a wealth of unusual data to predict the impact of climate change.

A Tim Sparks slides a small leather-bound notebook out of an envelope. The book's yellowing pages contain beekeeping notes made between 1941 and 1969 by the late Walter Coates of Kilworth, Leicestershire. He adds it to his growing pile of local journals, birdwatchers' lists and gardening diaries. "We're uncovering about one major new record each month," he says, "I still get surprised." Around two centuries before Coates, Robert Marsham, a landowner from Norfolk in the east of England, began recording the life cycles of plants and animals on his estate — when the first wood anemones flowered, the dates on which the oaks burst into leaf and the rooks began nesting. Successive Marshams continued compiling these notes for 211 years.

B Today, such records are being put to uses that their authors could not possibly have expected. These data sets, and others like them, are proving invaluable to ecologists interested in the timing of biological events, or phenology. By combining the records with climate data, researchers can reveal how, for example, changes in temperature affect the arrival of spring, allowing ecologists to make improved predictions about the impact of climate change. A small band of researchers is combing through hundreds of years of records taken by thousands of amateur naturalists. And more systematic projects have also started up, producing an overwhelming response. "The amount of interest is almost frightening," says Sparks, a climate researcher at the Centre for Ecology and Hydrology in Monks Wood, Cambridgeshire.

C Sparks first became aware of the army of "closet phenologists", as he describes them, when a retiring colleague gave him the Marsham records. He now spends much of his time following leads from one historical data set to another. As news of his quest spreads, people tip him off to other historical records, and more amateur phenologists come out of their closets. The British devotion to recording and collecting makes his job easier — one man from Kent sent him 30 years' worth of kitchen calendars, on which he had noted the date that his neighbour's magnolia tree flowered.

D Other researchers have unearthed data from equally odd sources. Rafe Sagarin, an ecologist at Stanford University in California, recently studied records of a betting contest in which participants attempt to guess the exact time at which a specially erected wooden tripod will fall through the surface of a thawing river. The competition has taken place annually on the Tenana River in Alaska since 1917, and analysis of the results showed that the thaw now arrives five days earlier than it did when the contest began.

E Overall, such records have helped to show that, compared with 20 years ago, a raft of natural events now occur earlier across much of the northern hemisphere, from the opening of leaves to the return of birds from migration and the emergence of butterflies from hibernation. The data can also hint at how nature will change in the future. Together with models of climate change, amateurs' records could help guide conservation. Terry Root, an ecologist at the University of Michigan in Ann Arbor, has collected birdwatchers' counts of wildfowl taken between 1955 and 1996 on seasonal ponds in the American Midwest and combined them with climate data and models of future warming. Her analysis shows that the increased droughts that the models predict could halve the breeding populations at the ponds. "The number of waterfowl in North America will most probably drop significantly with global warming," she says.

F But not all professionals are happy to use amateur data. "A lot of scientists won't touch them, they say they're too full of problems," says Root. Because different observers can have different ideas of what constitutes, for example, an open snowdrop. "The biggest concern with ad hoc observations is how carefully and systematically they were taken," says Mark Schwartz of the University of Wisconsin, Milwaukee, who studies the interactions between

plants and climate. "We need to know pretty precisely what a person's been observing — if they just say 'I noted when the leaves came out', it might not be that useful." Measuring the onset of autumn can be particularly problematic because deciding when leaves change colour is a more subjective process than noting when they appear.

G Overall, most phenologists are positive about the contribution that amateurs can make. "They get at the raw power of science: careful observation of the natural world," says Sagarin. But the professionals also acknowledge the need for careful quality control. Root, for example, tries to gauge the quality of an amateur archive by interviewing its collector. "You always have to worry — things as trivial as vacations can affect measurement. I disregard a lot of records because they're not rigorous enough," she says. Others suggest that the right statistics can iron out some of the problems with amateur data. Together with colleagues at Wageningen University in the Netherlands, environmental scientist Arnold van Vliet is developing statistical techniques to account for the uncertainty in amateur phenological data. With the enthusiasm of amateur phenologists evident from past records, professional researchers are now trying to create standardized recording schemes for future efforts. They hope that well-designed studies will generate a volume of observations large enough to drown out the idiosyncrasies of individual recorders. The data are cheap to collect, and can provide breadth in space, time and range of species. "It's very difficult to collect data on a large geographical scale without enlisting an army of observers," says Root.

H Phenology also helps to drive home messages about climate change. "Because the public understand these records, they accept them," says Sparks. It can also illustrate potentially unpleasant consequences, he adds, such as the finding that more rat infestations are reported to local councils in warmer years. And getting people involved is great for public relations. "People are thrilled to think that the data they've been collecting as a hobby can be used for something scientific — it empowers them," says Root.

Questions 27-33

Reading Passage 3 has eight paragraphs **A-H**.

Which paragraph contains the following information?

*Write the correct letter **A-H** in boxes 27-33 on your answer sheet.*

27 The definition of phenology
28 How Sparks first became aware of amateur records
29 How people reacted to their involvement in data collection
30 The necessity to encourage amateur data collection
31 A description of using amateur records to make predictions
32 Records of a competition providing clues for climate change
33 A description of a very old record compiled by generations of amateur naturalists

Questions 34-36

*Complete the sentences below with **NO MORE THAN TWO WORDS** from the passage.*

Write your answers in boxes 34-36 on your answer sheet.

34 Walter Coates's records largely contain the information of _____.
35 Robert Marsham is famous for recording the _____ of animals and plants on his land.
36 According to some phenologists, global warming may cause the number of waterfowl in North America to drop significantly due to increased _____.

Questions 37-40

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 37-40 on your answer sheet.

37 Why do a lot of scientists discredit the data collected by amateurs?

A Scientific method was not used in data collection.

B Amateur observers are not careful in recording their data.

C Amateur data is not reliable.

D Amateur data is produced by wrong candidates.

38 Mark Schwartz used the example of leaves to illustrate that?

A Amateur records can't be used.

B Amateur records are always unsystematic.

C The color change of leaves is hard to observe.

D Valuable information is often precise.

39 How do the scientists suggest amateur data should be used?

A Using improved methods.

B Be more careful in observation.

C Use raw materials.

D Applying statistical techniques in data collection.

40 What's the implication of phenology for ordinary people?

A It empowers the public.

B It promotes public relations.

C It warns people of animal infestation.

D It raises awareness about climate change in the public.

Test 2

READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-13*** *which are based on Reading Passage 1 below.*

How to spot a liar?

However much we may abhor it, deception comes naturally to all living things. Birds do it by feigning injury to lead hungry predators away from nesting young. Spider crabs do it by disguise: adorning themselves with strips of kelp and other debris, they pretend to be something they are not — and so escape their enemies. Nature amply rewards successful deceivers by allowing them to survive long enough to mate and reproduce. So it may come as no surprise to learn that human beings — who, according to psychologist Gerald Jellison of the University of South California, are lied to about 200 times a day, roughly one untruth every five minutes — often deceive for exactly the same reasons: to save their own skins or to get something they can't get by other means.

But knowing how to catch deceit can be just as important a survival skill as knowing how to tell a lie and get away with it. A person able to spot falsehood quickly is unlikely to be swindled by an unscrupulous business associate or hoodwinked by a devious spouse. Luckily, nature provides more than enough clues to trap dissemblers in their own tangled webs — if you know where to look. By closely observing facial expressions, body language and tone of voice, practically anyone can recognize the telltale signs of lying. Researchers are even programming computers — like those used on Lie Detector — to get at the truth by analyzing the same physical cues available to the naked eye and ear. "With the proper training, many people can learn to reliably detect lies," says Paul Ekman, professor of psychology at the University of California, San Francisco, who has spent the past 15 years studying the secret art of deception.

In order to know what kind of lies work best, successful liars need to accurately assess other people's emotional states. Ekman's research shows that this same emotional intelligence is essential for good lie detectors, too. The emotional state to watch out for is stress, the conflict most liars feel between the truth and what they actually

say and do.

Even high-tech lie detectors don't detect lies as such; they merely detect the physical cues of emotions, which may or may not correspond to what the person being tested is saying. Polygraphs, for instance, measure respiration, heart rate and skin conductivity, which tend to increase when people are nervous — as they usually are when lying. Nervous people typically perspire, and the salts contained in perspiration conduct electricity. That's why a sudden leap in skin conductivity indicates nervousness — about getting caught, perhaps? — which might, in turn, suggest that someone is being economical with the truth. On the other hand, it might also mean that the lights in the television studio are too hot — which is one reason polygraph tests are inadmissible in court. "Good lie detectors don't rely on a single sign," Ekman says, "but interpret clusters of verbal and nonverbal clues that suggest someone might be lying."

Those clues are written all over the face. Because the musculature of the face is directly connected to the areas of the brain that process emotion, the countenance can be a window to the soul. Neurological studies even suggest that genuine emotions travel different pathways through the brain than insincere ones. If a patient paralyzed by stroke on one side of the face, for example, is asked to smile deliberately, only the mobile side of the mouth is raised. But tell that same person a funny joke, and the patient breaks into a full and spontaneous smile. Very few people — most notably, actors and politicians — are able to consciously control all of their facial expressions. Lies can often be caught when the liar's true feelings briefly leak through the mask of deception. "We don't think before we feel," Ekman says. "Expressions tend to show up on the face before we're even conscious of experiencing an emotion."

One of the most difficult facial expressions to fake — or conceal, if it is genuinely felt — is sadness. When someone is truly sad, the forehead wrinkles with grief and the inner corners of the eyebrows are pulled up. Fewer than 15% of the people Ekman tested were able to produce this eyebrow movement voluntarily. By contrast, the lowering of the eyebrows associated with an angry scowl can be replicated at will by almost everybody. "If someone claims they are sad and the inner corners of their eyebrows don't go up," Ekman says, "the sadness is probably false."

The smile, on the other hand, is one of the easiest facial expressions to counterfeit. It takes just two muscles — the zygomaticus major muscles that extend from the cheekbones to the corners of the lips — to produce a grin. But there's a catch. A genuine smile affects not only the corners of the lips but also the orbicularis oculi, the muscle around the eye that produces the distinctive "crow's-feet" associated with people who laugh a lot. A counterfeit grin can be unmasked if the lip corners go up, the eyes crinkle but the inner corners of the eyebrows are not lowered, a movement controlled by the orbicularis oculi that is difficult to fake. The absence of lowered eyebrows is one reason why false smiles look so strained and stiff.

Questions 1-5

Do the following statements agree with the information given in Reading Passage 1?

In boxes 1-5 on your answer sheet write

YES	*if the statement agrees with the information*
NO	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

1 All living animals can lie.

2 Some people tell lies for self-preservation.

3 Scientists have used computers to analyze which part of brain is responsible for telling lies.

4 Lying as a survival skill is more important than detecting a lie.

5 To be a good liar one has to understand other people's emotions.

Questions 6-9

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 6-9 on your answer sheet.

6 How does the lie-detector work?

A It detects whether one's emotional state is stable.

B It detects one's brain activity level.

C It detects body behavior during one's verbal response.

D It analyzes one's verbal response word by word.

7 Lie detectors can't be used as evidence in a court of law, because

A lights often cause lie detectors to malfunction.

B they are based on too many verbal and non-verbal cues.

C polygraph tests are often inaccurate.

D there may be many causes of a certain body behavior.

8 Why does the author mention the paralyzed patients?

A To demonstrate how a paralyzed patient smiles

B To show the relation between true emotions and body behavior

C To examine how they were paralyzed

D To show the importance of happiness from recovery

9 The author uses politicians to exemplify that they can

A have emotions.

B imitate actors.

C detect other people's lies.

D mask their true feelings.

Question 10-13

Classify the following facial traits as referring to

A *Sadness*

B *Anger*

C *Happiness*

*Write the correct letter **A**, **B** or **C** in boxes 10-13 on your answer sheet.*

10 Inner corner of eyebrows raised

11 The whole eyebrows lowered

12 Lines formed around eyes

13 Lines formed above eyebrows

READING PASSAGE 2

You should spend about 20 minutes on ***Questions 14-26*** *which are based on Reading Passage 2 below.*

Being Left-handed in a Right-handed World

The world is designed for right-handed people. Why does a tenth of the population prefer the left?

Section A

The probability that two right-handed people would have a left-handed child is only about 9.5 percent. The chance rises to 19.5 percent if one parent is a lefty and 26 percent if both parents are left-handed. The preference, however, could also stem from an infant's imitation of his parents. To test genetic influence, starting in the 1970s British biologist Marian Annett of the University of Leicester hypothesized that no single gene determines handedness. Rather, during fetal development, a certain molecular factor helps to strengthen the brain's left hemisphere, which increases the probability that the right hand will be dominant, because the left side of the brain controls the right side of the body, and vice versa. Among the minority of people who lack this factor, handedness develops entirely by chance.

Research conducted on twins complicates the theory, however. One in five sets of identical twins involves one right-handed and one left-handed person, despite the fact that their genetic material is the same. Genes, therefore, are not solely responsible for handedness.

Section B

Genetic theory is also undermined by results from Peter Hepper and his team at Queen's University in Belfast, Ireland. In 2004 the psychologists used ultrasound to show that by the 15th week of pregnancy, fetuses already have a preference as to which thumb they suck. In most cases, the preference continued after birth. At 15 weeks, though, the brain does not yet have control over the body's limbs. Hepper speculates that fetuses tend to prefer whichever side of the body is developing quicker and that their movements, in turn, influence the brain's development. Whether this early preference is temporary or holds up throughout development and infancy is unknown.

Genetic predetermination is also contradicted by the widespread observation that children do not settle on either their right or left hand until they are two or three years old.

Section C

But even if these correlations were true, they did not explain what actually causes left-handedness. Furthermore, specialization on either side of the body is common among animals. Cats will favor one paw over another when fishing toys out from under the couch. Horses stomp more frequently with one hoof than the other. Certain crabs motion predominantly with the left or right claw. In evolutionary terms, focusing power and dexterity in one limb is more efficient than having to train two, four or even eight limbs equally. Yet for most animals, the preference for one side or the other is seemingly random. The overwhelming dominance of the right hand is associated only with humans. That fact directs attention toward the brain's two hemispheres and perhaps toward language.

Section D

Interest in hemispheres dates back to at least 1836. That year, at a medical conference, French physician Marc Dax reported on an unusual commonality among his patients. During his many years as a country doctor, Dax had encountered more than 40 men and women for whom speech was difficult, the result of some kind of brain damage. What was unique was that every individual suffered damage to the left side of the brain. At the conference, Dax elaborated on his theory, stating that each half of the brain was responsible for certain functions and that the left hemisphere controlled speech. Other experts showed little interest in the Frenchman's ideas.

Over time, however, scientists found more and more evidence of people experiencing speech difficulties following injury to the left brain. Patients with damage to the right hemisphere most often displayed disruptions in perception or concentration. Major advancements in understanding the brain's asymmetry were made in the 1960s as a result of so-called split-brain surgery, developed to help patients with epilepsy. During this operation, doctors severed the corpus callosum — the nerve bundle that connects the two hemispheres. The surgical cut also stopped almost all normal communication between the two hemispheres, which offered researchers the opportunity to investigate each side's activity.

Section E

In 1949 neurosurgeon Juhn Wada devised the first test to provide access to the brain's functional organization of language. By injecting an anesthetic into the right or left carotid artery, Wada temporarily paralyzed one side of a healthy brain, enabling him to more closely study the other side's capabilities. Based on this approach, Brenda Milner and the late Theodore Rasmussen of the Montreal Neurological Institute published a major study in 1975 that confirmed the theory that country doctor Dax had formulated nearly 140 years earlier: in 96 percent of right-handed people,

language is processed much more intensely in the left hemisphere. The correlation is not as clear in lefties, however. For two thirds of them, the left hemisphere is still the most active language processor. But for the remaining third, either the right side is dominant or both sides work equally, controlling different language functions.

That last statistic has slowed acceptance of the notion that the predominance of right-handedness is driven by left-hemisphere dominance in language processing. It is not at all clear why language control should somehow have dragged the control of body movement with it. Some experts think one reason the left hemisphere reigns over language is because the organs of speech processing—the larynx and tongue—are positioned on the body's symmetry axis. Because these structures were centered, it may have been unclear, in evolutionary terms, which side of the brain should control them, and it seems unlikely that shared operation would result in smooth motor activity.

Language and handedness could have developed preferentially for very different reasons as well. For example, some researchers, including evolutionary psychologist Michael C. Corballis of the University of Auckland in New Zealand, think that the origin of human speech lies in gestures. Gestures predated words and helped language emerge. If the left hemisphere began to dominate speech, it would have dominated gestures, too, and because the left brain controls the right side of the body, the right hand developed more strongly.

Section F

Perhaps we will know more soon. In the meantime, we can revel in what, if any, differences handedness brings to our human talents. Popular wisdom says right-handed, left-brained people excel at logical, analytical thinking. Left-handed, right-brained individuals are thought to possess more creative skills and may be better at combining the functional features emergent in both sides of the brain. Yet some neuroscientists see such claims as pure speculation.

Fewer scientists are ready to claim that left-handedness means greater creative potential. Yet lefties are prevalent among artists, composers and the generally acknowledged great political thinkers. Possibly if these individuals are among the lefties whose language abilities are evenly distributed between hemispheres, the intense interplay required could lead to unusual mental capabilities.

Section G

Or perhaps some lefties become highly creative simply because they must be more clever to get by in our right-handed world. This battle, which begins during the very early stages of childhood, may lay the groundwork for exceptional achievements.

Questions 14-18

Reading Passage 2 has seven sections **A-G**.

Which section contains the following information?

*Write the correct letter **A-G** in boxes 14-18 on your answer sheet.*

14 Preference of using one side of the body in animal species.

15 How likely one-handedness is born.

16 The age when the preference of using one hand is settled.

17 Occupations usually found in left-handed population.

18 A reference to an early discovery of each hemisphere's function.

Questions 19-22

Look at the following researchers (Questions 19-22) and the list of findings below.

Match each researcher with the correct finding.

*Write the correct letter **A-G** in boxes 19-22 on your answer sheet.*

19 Marian Annett

20 Peter Hepper

21 Brenda Milner & Theodore Rasmussen

22 Michael Corballis

List of Findings

A	Early language evolution is correlated to body movement and thus affecting the preference of use of one hand.
B	A single biological component determines the handedness of a child.
C	Each hemisphere of the brain is in charge of different body functions.
D	Language process is mainly centered in the left-hemisphere of the brain.
E	Speech difficulties are often caused by brain damage.
F	The rate of development of one side of the body has influence on hemisphere preference in fetus.
G	Brain function already matures by the end of the fetal stage.

Questions 23-26

Do the following statements agree with the information given in Reading Passage 2?

In boxes 23-26 on your answer sheet write

YES	*if the statement agrees with the information*
NO	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

23 The study of twins shows that genetic determination is not the only factor for left-handedness.

24 Marc Dax's report was widely accepted in his time.

25 Juhn Wada based his findings on his research of people with language problems.

26 There tend to be more men with left-handedness than women.

READING PASSAGE 3

You should spend about 20 minutes on ***Questions 27-40*** *which are based on Reading Passage 3 below.*

Questions 27-34

Reading Passage 3 has nine paragraphs **A-I**.

Choose the correct heading for each paragraph from the list of headings below.

Write the correct number ***i-xii*** *in boxes 27-34 on your answer sheet.*

List of Headings

i	Benefits of the new scheme and its resistance
vii	Making use of the once wasted weekends
iii	Cutting work hours for better efficiency
iv	Optimism of the great future
v	Negative effects on production itself
vi	Soviet Union's five year plan
vii	The abolishment of the new work-week scheme
viii	The Ford model
ix	Reaction from factory workers and their families
x	The color-coding scheme
xi	Establishing a three-shift system
xii	Foreign inspiration

27 Paragraph **A**

28 Paragraph **B**

Example	*Answer*
Paragraph **C**	**iii**

29 Paragraph **D**

30 Paragraph **E**

31 Paragraph **F**

32 Paragraph **G**

33 Paragraph **H**

34 Paragraph **I**

Soviet's New Working Week

Historian investigates how Stalin changed the calendar to keep the Soviet people continually at work.

A "There are no fortresses that Bolsheviks cannot storm". With these words, Stalin expressed the dynamic self-confidence of the Soviet Union's Five Year Plan: weak and backward Russia was to turn overnight into a powerful modern industrial country. Between 1928 and 1932, production of coal, iron and steel increased at a fantastic rate, and new industrial cities sprang up, along with the world's biggest dam. Everyone's life was affected, as collectivised farming drove millions from the land to swell the industrial proletariat. Private enterprise disappeared in city and country, leaving the State supreme under the dictatorship of Stalin. Unlimited enthusiasm was the mood of the day, with the Communists believing that iron will and hard-working manpower alone would bring about a new world.

B Enthusiasm spread to time itself, in the desire to make the state a huge efficient machine, where not a moment would be wasted, especially in the workplace. Lenin had already been intrigued by the ideas of the American Frederick Winslow Taylor (1856-1915), whose time-motion studies had discovered ways of stream-lining effort so that every worker could produce the maximum. The Bolsheviks were also great admirers of Henry Ford's assembly line mass production and of his Fordson tractors that were imported by the thousands. The engineers who came with them to train their users helped spread what became a real cult of Ford. Emulating and surpassing such capitalist models formed part of the training of the new Soviet Man, a heroic figure whose unlimited capacity for work would benefit everyone in the dynamic new society. All this culminated in the Plan, which has been characterized as the triumph of the machine, where workers would become supremely efficient robot-like creatures.

C Yet this was Communism whose goals had always included improving the lives of the proletariat. One major step in that direction was the sudden announcement in 1927 that reduced the working day from eight to seven hours. In January 1929, all industries were ordered to adopt the shorter day by the end of the Plan. Workers were also to have an extra hour off on the eve of Sundays and holidays. Typically though, the state took away more than it gave, for this was part of a scheme to increase production by establishing a three-shift system. This meant that the factories were open day and night and that many had to work at highly undesirable hours.

D Hardly had that policy been announced, though, than Yuri Larin, who had been a close associate of Lenin and architect of his radical economic policy, came up with an idea for even greater efficiency. Workers were free and plants were closed on

Sundays. Why not abolish that wasted day by instituting a continuous work week so that the machines could operate to their full capacity every day of the week? When Larin presented his idea to the Congress of Soviets in May 1929, no one paid much attention. Soon after, though, he got the ear of Stalin, who approved. Suddenly, in June, the Soviet press was filled with articles praising the new scheme. In August, the Council of Peoples' Commissars ordered that the continuous work week be brought into immediate effect, during the height of enthusiasm for the Plan, whose goals the new schedule seemed guaranteed to forward.

E The idea seemed simple enough, but turned out to be very complicated in practice. Obviously, the workers couldn't be made to work seven days a week, nor should their total work hours be increased. The solution was ingenious: a new five-day week would have the workers on the job for four days, with the fifth day free; holidays would be reduced from ten to five, and the extra hour off on the eve of rest days would be abolished. Staggering the rest-days between groups of workers meant that each worker would spend the same number of hours on the job, but the factories would be working a full 360 days a year instead of 300. The 360 divided neatly into 72 five-day weeks. Workers in each establishment (at first factories, then stores and offices) were divided into five groups, each assigned a colour which appeared on the new Uninterrupted Work Week calendars distributed all over the country. Colour-coding was a valuable mnemonic device, since workers might have trouble remembering what their day off was going to be, for it would change every week. A glance at the colour on the calendar would reveal the free day, and allow workers to plan their activities. This system, however, did not apply to construction or seasonal occupations, which followed a six-day week, or to factories or mines which had to close regularly for maintenance: they also had a six-day week, whether interrupted (with the same day off for everyone) or continuous. In all cases, though, Sunday was treated like any other day.

F Official propaganda touted the material and cultural benefits of the new scheme. Workers would get more rest; production and employment would increase (for more workers would be needed to keep the factories running continuously); the standard of living would improve. Leisure time would be more rationally employed, for cultural activities (theatre, clubs, sports) would no longer have to be crammed into a weekend, but could flourish every day, with their facilities far less crowded. Shopping would be easier for the same reasons. Ignorance and superstition, as represented by organized religion, would suffer a mortal blow, since 80 per cent of the workers would be on the job on any given Sunday. The only objection concerned the family, where normally more than one member was working: well, the Soviets insisted, the narrow family was far less important than the vast common good and besides, arrangements could be made for husband and wife to share a common schedule. In fact, the regime had long wanted to weaken or sideline the two greatest potential threats to its total dominance: organised religion and the nuclear family. Religion succumbed, but the family, as even Stalin finally had to admit, proved much more resistant.

G The continuous work week, hailed as a Utopia where time itself was conquered and the sluggish Sunday abolished forever, spread like an epidemic. According to official figures, 63 per cent of industrial workers were so employed by April 1930; in June, all industry was ordered to convert during the next year. The fad reached its peak in October when it affected 73 per cent of workers. In fact, many managers simply claimed that their factories had gone over to the new week, without actually applying it. Conforming to the demands of the Plan was important; practical matters could wait. By then, though, problems were becoming obvious. Most serious (though never officially admitted), the workers hated it. Coordination of family schedules was virtually impossible and usually ignored, so husbands and wives only saw each other before or after work; rest days were empty without any loved ones to share them — even friends were likely to be on a different schedule. Confusion reigned: the new plan was introduced haphazardly, with some factories operating five-, six- and seven-day weeks at the same time, and the workers often not getting their rest days at all.

H The Soviet government might have ignored all that (It didn't depend on public approval), but the new week was far from having the vaunted effect on production. With the complicated rotation system, the work teams necessarily found themselves doing different kinds of work in successive weeks. Machines, no longer consistently in the hands of people who knew how to tend them, were often poorly maintained or even broken. Workers lost a sense of responsibility for the special tasks they had normally performed.

I As a result, the new week started to lose ground. Stalin's speech of June 1931, which criticised the "depersonalised labor" its too hasty application had brought, marked the beginning of the end. In November, the government ordered the widespread adoption of the six-day week, which had its own calendar, with regular breaks on the 6th, 12th, 18th, 24th, and 30th, with Sunday usually as a working day. By July 1935, only 26 per cent of workers still followed the continuous schedule, and the six-day week was soon on its way out. Finally, in 1940, as part of the general reversion to more traditional methods, both the continuous five-day week and the novel six-day week were abandoned, and Sunday returned as the universal day of rest. A bold but typically ill-conceived experiment was at an end.

Questions 35-37

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 35-37 on your answer sheet.

35 According to paragraph A, Soviet's five year plan was a success because

A Bolsheviks built a strong fortress.

B Russia was weak and backward.

C industrial production increased.

D Stalin was confident about Soviet's potential.

36 Daily working hours were cut from eight to seven to

A improve the lives of all people.

B boost industrial productivity.

C get rid of undesirable work hours.

D change the already establish three-shift work system.

37 Many factory managers claimed to have complied with the demands of the new work week because

A they were pressurized by the state to do so.

B they believed there would not be any practical problems.

C they were able to apply it.

D workers hated the new plan.

Questions 38-40

*Answer the questions below using **NO MORE THAN TWO WORDS** from the passage for each answer.*

Write your answers in boxes 38-40 on your answer sheet.

38 Whose idea of continuous work week did Stalin approve and helped to implement?

39 What method was used to help workers to remember the rotation of their off days?

40 What was the most resistant force to the new work week scheme?

Test 3

READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-13*** *which are based on Reading Passage 1 below.*

LEARNING BY EXAMPLES

A Learning Theory is rooted in the work of Ivan Pavlov, the famous scientist who discovered and documented the principles governing how animals (humans included) learn in the 1900s. Two basic kinds of learning or conditioning occur, one of which is famously known as the classical conditioning. Classical conditioning happens when an animal learns to associate a neutral stimulus (signal) with a stimulus that has intrinsic meaning based on how closely in time the two stimuli are presented. The classic example of classical conditioning is a dog's ability to associate the sound of a bell (something that originally has no meaning to the dog) with the presentation of food (something that has a lot of meaning for the dog) a few moments later. Dogs are able to learn the association between bell and food, and will salivate immediately after hearing the bell once this connection has been made. Years of learning research have led to the creation of a highly precise learning theory that can be used to understand and predict how and under what circumstances most any animal will learn, including human beings, and eventually help people figure out how to change their behaviors.

B Role models are a popular notion for guiding child development, but in recent years very interesting research has been done on learning by example in other animals. If the subject of animal learning is taught very much in terms of classical or operant conditioning, it places too much emphasis on how we allow animals to learn and not enough on how they are equipped to learn. To teach a course of mine I have been dipping profitably into a very interesting and accessible compilation of papers on social learning in mammals, including chimps and human children, edited by Heyes and Galef (1996).

C The research reported in one paper started with a school field trip to Israel to a pine forest where many pine cones were discovered, stripped to the central core. So the investigation started with no weighty theoretical intent, but was directed at finding out what was eating the nutritious pine seeds and how they managed to get them out of the cones. The culprit

proved to be the versatile and athletic black rat (Rattus rattus) and the technique was to bite each cone scale off at its base, in sequence from base to tip following the spiral growth pattern of the cone.

D Urban black rats were found to lack the skill and were unable to learn it even if housed with experienced cone strippers. However, infants of urban mothers cross fostered to stripper mothers acquired the skill, whereas infants of stripper mothers fostered by an urban mother could not. Clearly the skill had to be learned from the mother. Further elegant experiments showed that naive adults could develop the skill if they were provided with cones from which the first complete spiral of scales had been removed; rather like our new photocopier which you can work out how to use once someone has shown you how to switch it on. In the case of rats, the youngsters take cones away from the mother when she is still feeding on them, allowing them to acquire the complete stripping skill.

E A good example of adaptive bearing we might conclude, but let's see the economies. This was determined by measuring oxygen uptake of a rat stripping a cone in a metabolic chamber to calculate energetic cost and comparing it with the benefit of the pine seeds measured by calorimeter. The cost proved to be less than 10% of the energetic value of the cone. An acceptable profit margin.

F A paper in 1996 Animal Behaviour by Bednekoff and Balda provides a different view of the adaptiveness of social learning. It concerns the seed caching behaviour of Clark's nutcracker (Nucifraga columbiana) and the Mexican jay (Aphelocoma ultramarina). The former is a specialist, caching 30,000 or so seeds in scattered locations that it will recover over the months of winter; the Mexican jay will also cache food but is much less dependent upon this than the nutcracker. The two species also differ in their social structure, the nutcracker being rather solitary while the jay forages in social groups.

G The experiment is to discover not just whether a bird can remember where it hid a seed but also if it can remember where it saw another bird hide a seed. The design is slightly comical with a cacher bird wandering about a room with lots of holes in the floor hiding food in some of the holes, while watched by an observer bird perched in a cage. Two days later cachers and observers are tested for their discovery rate against an estimated random performance. In the role of cacher, not only nutcracker but also the less specialised jay performed above chance; more surprisingly, however, jay observers were as successful as jay cachers whereas nutcracker observers did no better than chance. It seems that, whereas the nutcracker is highly adapted at remembering where it hid its own seeds, the social living Mexican jay is more adept at remembering, and so exploiting, the caches of others.

Questions 1-4

Reading Passage 1 has seven paragraphs **A-G**.

Which paragraph contains the following information?

*Write the correct letter **A-G** in boxes 1-4 on your answer sheet.*

1 A comparison between rats' learning and human learning
2 A reference to the earliest study in animal learning
3 The discovery of who stripped the pine cone
4 A description of a cost-effectiveness experiment

Questions 5-8

Do the following statements agree with the information given in Reading Passage 1?

In boxes 5-8 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

5 The field trip to Israel was to investigate how black rats learn to strip pine cones.
6 The pine cones were stripped from bottom to top by black rats.
7 It can be learned from other relevant experiences to use a photocopier.
8 Stripping the pine cones is an instinct of the black rats.

Questions 9-13

Complete the summary below using words from the box.

Write your answers in boxes 9-13 on your answer sheet.

While the Nutcracker is more able to cache seeds, the Jay relies **9** _____ on caching food and is thus less specialized in this ability, but more **10** _____. To study their behavior of caching and finding their caches, an experiment was designed and carried out to test these two birds for their ability to remember where they hid the seeds.

In the experiment, the cacher bird hid seeds in the ground while the other **11** _____. As a result, the Nutcracker and the Mexican Jay showed different performance in the role of **12** _____ at finding the seeds — the observing **13** _____ didn't do as well as its counterpart.

less	more	solitary	social	cacher	observer
remembered		watched	Jay	Nutcracker	

READING PASSAGE 2

*You should spend about 20 minutes on **Questions 14-26** which are based on Reading Passage 2 below.*

A New Ice Age

William Curry is a serious, sober climate scientist, not an art critic. But he has spent a lot of time perusing Emanuel Gottlieb Leutze's famous painting "George Washington Crossing the Delaware," which depicts a boatload of colonial American soldiers making their way to attack English and Hessian troops the day after Christmas in 1776. "Most people think these other guys in the boat are rowing, but they are actually pushing the ice away," says Curry, tapping his finger on a reproduction of the painting. Sure enough, the lead oarsman is bashing the frozen river with his boot. "I grew up in Philadelphia. The place in this painting is 30 minutes away by car. I can tell you, this kind of thing just doesn't happen anymore."

But it may again soon. And ice-choked scenes, similar to those immortalized by the 16th-century Flemish painter Pieter Brueghel the Elder, may also return to Europe. His works, including the 1565 masterpiece "Hunters in the Snow," make the now-temperate European landscapes look more like Lapland. Such frigid settings were commonplace during a period dating roughly from 1300 to 1850 because much of North America and Europe was in the throes of a little ice age. And now there is mounting evidence that the chill could return. A growing number of scientists believe conditions are ripe for another prolonged cooldown, or small ice age. While no one is predicting a brutal ice sheet like the one that covered the Northern Hemisphere with glaciers about 12,000 years ago, the next cooling trend could drop average temperatures 5 degrees Fahrenheit over much of the United States and 10 degrees in the Northeast, northern Europe, and northern Asia.

"It could happen in 10 years," says Terrence Joyce, who chairs the

Woods Hole Physical Oceanography Department. "Once it does, it can take hundreds of years to reverse." And he is alarmed that Americans have yet to take the threat seriously.

A drop of 5 to 10 degrees entails much more than simply bumping up the thermostat and carrying on. Both economically and ecologically, such quick, persistent chilling could have devastating consequences. A 2002 report titled "Abrupt Climate Change: Inevitable Surprises," produced by the National Academy of Sciences, pegged the cost from agricultural losses alone at $100 billion to $250 billion while also predicting that damage to ecologies could be vast and incalculable. A grim sampler: disappearing forests, increased housing expenses, dwindling freshwater, lower crop yields, and accelerated species extinctions.

The reason for such huge effects is simple. A quick climate change wreaks far more disruption than a slow one. People, animals, plants, and the economies that depend on them are like rivers, says the report: "For example, high water in a river will pose few problems until the water runs over the bank, after which levees can be breached and massive flooding can occur. Many biological processes undergo shifts at particular thresholds of temperature and precipitation."

Political changes since the last ice age could make survival far more difficult for the world's poor. During previous cooling periods, whole tribes simply picked up and moved south, but that option doesn't work in the modern, tense world of closed borders. "To the extent that abrupt climate change may cause rapid and extensive changes of fortune for those who live off the land, the inability to migrate may remove one of the major safety nets for distressed people," says the report.

But first things first. Isn't the earth actually warming? Indeed it is, says Joyce. In his cluttered office, full of soft light from the foggy Cape Cod morning, he explains how such warming could actually be the surprising culprit of the next mini-ice age. The paradox is a result of the appearance over the past 30 years in the North Atlantic of huge rivers of freshwater—the equivalent of a 10-foot-thick layer—mixed into the salty sea. No one is certain where the fresh torrents are coming from, but a prime suspect is melting Arctic ice, caused by a buildup of carbon

dioxide in the atmosphere that traps solar energy.

The freshwater trend is major news in ocean-science circles. Bob Dickson, a British oceanographer who sounded an alarm at a February conference in Honolulu, has termed the drop in salinity and temperature in the Labrador Sea—a body of water between northeastern Canada and Greenland that adjoins the Atlantic—"arguably the largest full-depth changes observed in the modern instrumental oceanographic record."

The trend could cause a little ice age by subverting the northern penetration of Gulf Stream waters. Normally, the Gulf Stream, laden with heat soaked up in the tropics, meanders up the east coasts of the United States and Canada. As it flows northward, the stream surrenders heat to the air. Because the prevailing North Atlantic winds blow eastward, a lot of the heat wafts to Europe. That's why many scientists believe winter temperatures on the Continent are as much as 36 degrees Fahrenheit warmer than those in North America at the same latitude. Frigid Boston, for example, lies at almost precisely the same latitude as balmy Rome. And some scientists say the heat also warms Americans and Canadians. "It's a real mistake to think of this solely as a European phenomenon," says Joyce.

Having given up its heat to the air, the now-cooler water becomes denser and sinks into the North Atlantic by a mile or more in a process oceanographers call thermohaline circulation. This massive column of cascading cold is the main engine powering a deepwater current called the Great Ocean Conveyor that snakes through all the world's oceans. But as the North Atlantic fills with freshwater, it grows less dense, making the waters carried northward by the Gulf Stream less able to sink. The new mass of relatively fresh water sits on top of the ocean like a big thermal blanket, threatening the thermohaline circulation. That in turn could make the Gulf Stream slow or veer southward. At some point, the whole system could simply shut down, and do so quickly. "There is increasing evidence that we are getting closer to a transition point, from which we can jump to a new state."

Questions 14-17

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 14-17 on your answer sheet.

14 The writer uses paintings in the first paragraph to illustrate

A possible future climate change.

B climate change of the last two centuries.

C the river doesn't freeze in winter anymore.

D how George Washington led his troops across the river.

15 Which of the following do scientists believe to be possible?

A The temperature may drop over much of the Northern Hemisphere.

B It will be colder than 12,000 years ago.

C The entire Northern Hemisphere will be covered in ice.

D Europe will look more like Laplan.

16 Why is it difficult for the poor to survive the next ice age?

A People don't live in tribes anymore.

B Politics are changing too fast today.

C Abrupt climate change causes people to live off their land.

D Migration has become impossible because of closed borders.

17 Why is continental Europe much warmer than North America in winter?

A Wind blows most of the heat of tropical current to Europe.

B Europe and North America are at different latitudes.

C The Gulf Stream has stopped yielding heat to the air.

D The Gulf Stream moves north along the east coast of North America.

Questions 18-22

Look at the following statements (Questions 18-22) and the list of people in the box below.

*Match each statement with the correct person **A-D**.*

*Write the appropriate letter **A-D** in boxes 18-22 on your answer sheet.*

***NB** You many wse any letter more than once.*

18 Most Americans are not prepared for the next ice age.

19 The result of abrupt climate change is catastrophic.

20 The world is not as cold as it used to be.

21 Global warming is closely connected to the ice age.

22 Alerted people of the change of ocean water in a conference.

List of People

A William Curry

B Terrence Joyce

C Bob Dickson

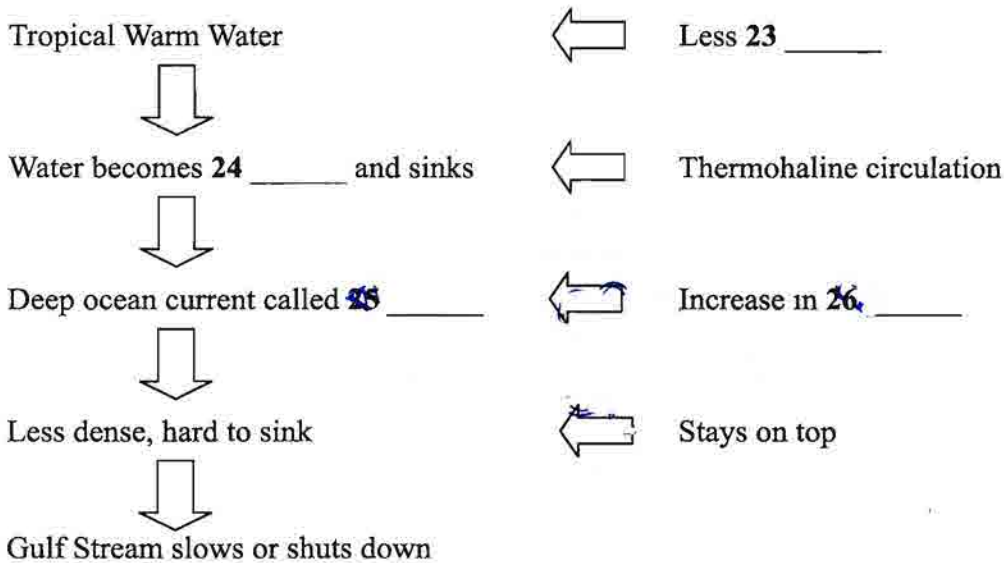
D National Academy of Science

Questions 23-26

Complete the flow chart below.

*Choose **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 23-26 on your answer sheet.



READING PASSAGE 3

You should spend about 20 minutes on ***Questions 27-40*** *which are based on Reading Passage 3 below.*

The Fruit Book

It's not every scientist who writes books for people who can't read. And how many scientists want their books to look as dog-eared as possible? But Patricia Shanley, an ethnobotanist, wanted to give something back. After the poorest people of the Amazon allowed her to study their land and its ecology, she turned her research findings into a picture book that tells the local people how to get a good return on their trees without succumbing to the lure of a quick buck from a logging company. It has proved a big success.

A The book is called *Fruit Trees and Useful Plants in the Lives of Amazonians*, but is better known simply as the "fruit book". The second edition was produced at the request of politicians in western Amazonia. Its blend of hard science and local knowledge on the use and trade of 35 native forest species has been so well received (and well used) that no less a dignitary than Brazil's environment minister, Marina Silva, has written the foreword. "There is nothing else like the Shanley book," says Adalberto Verrísimo, director of the Institute of People and the Environment of the Amazon. "It gives science back to the poor, to the people who really need it."

B Shanley's work on the book began a decade ago, with a plea for help from the Rural Workers' Union of Paragominas, a Brazilian town whose prosperity is based on exploitation of timber. The union realised that logging companies would soon be knocking on the doors of the caboclos, peasant farmers living on the Rio Capim, an Amazon tributary in the Brazilian state of Para. Isolated and illiterate, the caboclos would have little concept of the true value of their trees; communities downstream had already sold off large blocks of forest for a pittance. "What they wanted to know was how valuable the forests were," recalls Shanley, then a researcher in the area for the Massachusetts-based Woods Hole Research Center.

C The Rural Workers' Union wanted to know whether harvesting wild fruits would make economic sense in the Rio Capim. "There was a lot of interest in trading non-timber forest products (NTFPs)," Shanley says. At the time, environmental groups and green-minded businesses were promoting the idea. This was the view

presented in a seminal paper, *Valuation of an Amazonian Rainforest*, published in *Nature* in 1989. The researchers had calculated that revenues from the sale of fruits could far exceed those from a one-off sale of trees to loggers. "The union was keen to discover whether it made more sense conserving the forest for subsistence use and the possible sale of fruit, game and medicinal plants, than selling trees for timber," says Shanley. Whether it would work for the caboclos was far from clear.

D Although Shanley had been invited to work in the Rio Capim, some caboclos were suspicious. "When Patricia asked if she could study my forest," says Joao Fernando Moreira Brito, "my neighbours said she was a foreigner who'd come to rob me of my trees." In the end, Moreira Brito, or Mangueira as he is known, welcomed Shanley and worked on her study. His land, an hour's walk from the Rio Capim, is almost entirely covered with primary forest. A study of this and other tracts of forest selected by the communities enabled Shanley to identify three trees, found throughout the Amazon, whose fruit was much favoured by the caboclos: *bacuri* (Platonia insignis), *uxi* (Endopleura uchi) and *piquia* (Cayocas villosum). The caboclos used their fruits, extracted oils, and knew what sort of wildlife they attracted. But, in the face of aggressive tactics from the logging companies, they had no measure of the trees' financial worth. The only way to find out, Shanley decided, was to start from scratch with a scientific study. "From a scientific point of view, hardly anything was known about these trees," she says. But six years of field research yielded a mass of data on their flowering and fruiting behaviour. During 1993 and 1994, 30 families weighed everything they used from the forest — game, fruit, fibre, medicinal plants — and documented its source.

E After three logging sales and a major fire in 1997, the researchers were also able to study the ecosystem's reaction to logging and disturbance. They carried out a similar, though less exhaustive, study in 1999, this time with 15 families. The changes were striking. Average annual household consumption of forest fruit had fallen from 89 to 28 kilograms between 1993 and 1999. "What we found," says Shanley, "was that fruit collection could coexist with a certain amount of logging, but after the forest fires it dropped dramatically." Over the same period, fibre use also dropped from around 20 to 4 kilograms. The fire and logging also changed the nature of the caboclo diet. In 1993 most households ate game two or three times a month. By 1999 some were fortunate if they ate game more than two or three times a year.

F The loss of certain species of tree was especially significant. Shanley's team persuaded local hunters to weigh their catch, noting the trees under which the

animals were caught. Over the year, they trapped five species of game averaging 232 kilograms under *piquia* trees. Under *copaiba*, they caught just two species averaging 63 kilograms; and under *uxi*, four species weighing 38 kilograms. At last, the team was getting a handle on which trees were worth keeping, and which could reasonably be sold. "This showed that selling *piquia* trees to loggers for a few dollars made little sense," explains Shanley. "Their local value lies in providing a prized fruit, as well as flowers which attract more game than any other species."

G As a result of these studies, Shanley had to tell the Rural Workers' Union of Paragominas that the *Nature* thesis could not be applied wholesale to their community — harvesting NTFPs would not always yield more than timber sales. Fruiting patterns of trees such as *uxi* were unpredictable, for example. In 1994, one household collected 3654 *uxi* fruit; the following year, none at all.

H This is not to say that wild fruit trees were unimportant. On the contrary, argues Shanley, they are critical for subsistence, something that is often ignored in much of the current research on NTFPs, which tends to focus on their commercial potential. Geography was another factor preventing the Rio Capim caboclos from establishing a serious trade in wild fruit: villagers in remote areas could not compete with communities collecting NTFPs close to urban markets, although they could sell them to passing river boats.

I But Shanley and her colleagues decided to do more than just report their results to the union. Together with two of her research colleagues, Shanley wrote the fruit book. This, the *Bible* and a publication on medicinal plants co-authored by Shanley and designed for people with minimal literacy skills, are about the only books you will see along this stretch of the Rio Capim. The first print ran to only 3000 copies, but the fruit book has been remarkably influential, and is used by colleges, peasant unions, industries and the caboclos themselves. Its success is largely due to the fact that people with poor literacy skills can understand much of the information it contains, thanks to its illustrations, anecdotes, stories and songs. "The book doesn't tell people what to do," says Shanley, "but it does provide them with choices." Caboclos who have used the book now have a much better understanding of which trees to sell to the loggers, and which to protect.

Questions 27-32

Reading Passage 3 has nine paragraphs **A-I**.

Which paragraph contains the following information?

*Write the correct letter **A-I** in boxes 27-32 on your answer sheet.*

27 A description of Shanley's initial data collection
28 Why a government official also contributes to the book
29 Reasons why the community asked Shanley to conduct the research
30 Reference to the starting point of her research
31 Two factors that alter food consumption patterns
32 Why the book is successful

Questions 33-40

Complete the summary below.

*Choose **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 33-40 on your answer sheet.

Forest fire has caused local villagers to consume less:
33 _____
34 _____
Game

There is the least amount of game hunted under **35** _____ and its fruit yield is also **36** _____. Thus is more reasonable to keep **37** _____.

All the trees can also be used for **38** _____ besides selling them to loggers. But this is often ignored, because most researches usually focus on the **39** _____ of the trees.

The purpose of the book:
To give information about **40** _____.

Test 4

READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-13*** *which are based on Reading Passage 1 below.*

The Mozart Effect

A Music has been used for centuries to heal the body. In the *Ebers Papyrs* (one of the earliest medical documents, circa 1500 B.C.), it was recorded that physicians chanted to heal the sick (Castleman, 1994). In various cultures, we have observed singing as part of healing rituals. In the world of Western medicine, however, using music in medicine lost popularity until the introduction of the radio. Researchers then started to notice that listening to music could have significant physical effects. Therapists noticed music could help calm anxiety and researchers saw that listening to music could cause a drop in blood pressure. In addition to these two areas, music has been used with cancer chemotherapy to reduce nausea, during surgery to reduce stress hormone production, during childbirth, and in stroke recovery (Castleman, 1994 and Westley, 1998). It has been shown to decrease pain as well as enhance the effectiveness of the immune system. In Japan, compilations of music are used as medication, of sorts. For example, if you want to cure a headache or migraine, the album suggested Mendelssohn's "Spring Song," Dvorak's "Humoresque," or part of George Gershwin's "An American in Paris" (Campbell, 1998). Music is also being used to assist in learning, in a phenomenon called the Mozart Effect.

B Frances H. Rauscher, Ph.D., first demonstrated the correlation between music and learning in an experiment in 1993. His experiments indicated that a 10-minute dose of Mozart could temporarily boost intelligence. Groups of students were given intelligence tests after listening to silence, relaxation tapes, or Mozart's Sonata for Two Pianos in D Major. He found that after silence, the average IQ

score was 110, and after the relaxation tape, scores rose a point. After listening to Mozart, however, the scores jumped to 119 (Westley, 1998). Even students who did not like the music still had an increased score on the IQ test. Rauscher hypothesized that "listening to complex, non-repetitive music, like Mozart, may stimulate neural pathways that are important in thinking" (Castleman, 1994).

C The same experiment was repeated on rats by Rauscher and Hong Hua Li from Stanford. Rats also demonstrated enhancement in their intelligence performance. These new studies indicate that rats that were exposed to Mozart showed "increased gene expression of BDNF (a neural growth factor), CREB (a learning and memory compound), and Synapsin I (a synaptic growth protein)" in the brain's hippocampus, compared with rats in the control group, which heard only white noise (e.g. the whooshing sound of a radio tuned between stations).

D How exactly does the Mozart effect work? Researchers are still trying to determine the actual mechanisms for the formation of these enhanced learning pathways. Neuroscientists suspect that music can actually help build and strengthen connections between neurons in the cerebral cortex in a process similar to what occurs in brain development. When a baby is born, certain connections have already been made — like connections for heartbeat and breathing. As new information is learned and motor skills develop, new neural connections are formed. Neurons that are not used will eventually die while those used repeatedly will form strong connections. Although a large number of these neural connections require experience, they also must occur within a certain time frame. For example, a child born with cataracts cannot develop connections within the visual cortex. If the cataracts are removed by surgery right away, the child's vision develops normally. However, after the age of 2, if the cataracts are removed, the child will remain blind because those pathways cannot establish themselves.

E Music seems to work in the same way. In October of 1997, researchers at the University of Konstanz in Germany found that music actually rewires neural circuits (Begley, 1996). Although some of these circuits are formed for physical skills needed to play an instrument, just listening to music strengthens connection used in higher-order thinking. Listening to music can then be thought of as "exercise" for the brain, improving concentration and enhancing intuition.

F If you're a little skeptical about the claims made by supporters of the Mozart Effect, you're not alone. Many people accredit the advanced learning of some chil-

dren who take music lessons to other personality traits, such as motivation and persistence, which is required in all types of learning. There have also been claims of that influencing the results of some experiments.

G Furthermore, many people are critical of the role the media had in turning an isolated study into a trend for parents and music educators. After Mozart Effect was published to the public, the sales of Mozart CDs stayed on the top of the hit list for three weeks. In an article by Michael Linton, he wrote that the research that began this phenomenon (the study by researchers at the University of California Irvine) showed only a temporary boost in IQ, which was not significant enough to even last throughout the course of the experiment. Using music to influence intelligence was used in Confucian civilization and Plato alluded to Pythagorean music when he described is ideal state in *The Republic*. In both of these examples, music did not have caused any overwhelming changes, and the theory eventually died out. Linton also asks, "If Mozart's Music were able to improve health, why was Mozart himself so frequently sick? If listening to Mozart's music increases intelligence and encourages spirituality, why aren't the world's smartest and most spiritual people Mozart specialists?" Linton raises an interesting point, if the Mozart effect causes such significant changes, why isn't there more documented evidence?

H The "trendiness" of the Mozart Effect may have died out somewhat, but there are still strong supporters (and opponents) of the claims made in 1993. Since that initial experiment, there has not been a surge of supporting evidence. However, many parents, after playing classical music while pregnant or when their children are young, will swear by the Mozart Effect. A classmate of mine once told me that listening to classical music while studying will help with memorization. If we approach this controversy from a scientific aspect, although there has been some evidence that music does increase brain activity, actual improvements in learning and memory have not been adequately demonstrated.

Questions 1-5

Reading Passage 1 has eight paragraphs **A-H.**

Which paragraph contains the following information?

*Write the correct letter **A-H** in boxes 1-5 on your answer sheet.*

1 A description of how music affects the brain development of infants
2 Public's first reaction to the discovery of Mozart Effect
3 The description of Rauscher's original experiment
4 The description of using music for healing in other countries
5 Other qualities needed in all learning

Questions 6-8

Complete the summary below.

*Choose **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 6-8 on your answer sheet.

During the experiment conducted by Frances Rauscher, subjects were exposed to the music for a **6** _____ period of time before they were tested. And Rauscher believes the enhancement in their performance is related to the **7** _____ nature of Mozart music. Later, similar experiment was also repeated on **8** _____ .

Questions 9-13

Do the following statements agree with the information given in Reading Passage 1?

In boxes 9-13 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

9 All kinds of music can enhance one's brain performance to somewhat extent.

10 There is no neural connection made when a baby is born.

11 There are very few who question Mozart Effect.

12 Michael Linton conducted extensive research on Mozart's life.

13 There is not enough evidence in support of Mozart Effect today.

READING PASSAGE 2

*You should spend about 20 minutes on **Questions 14-26** which are based on Reading Passage 2 below.*

The Ant and the Mandarin

In 1476, the farmers of Berne in Switzerland decided there was only one way to rid their fields of the cutworms attacking their crops. They took the pests to court. The worms were tried, found guilty and excommunicated by the archbishop. In China, farmers had a more practical approach to pest control. Rather than relying on divine intervention, they put their faith in frogs, ducks and ants. Frogs and ducks were encouraged to snap up the pests in the paddies and the occasional plague of locusts. But the notion of biological control began with an ant. More specifically, it started with the predatory yellow citrus ant Oecophylla smaragdina, which has been polishing off pests in the orange groves of southern China for at least 1700 years. The yellow citrus ant is a type of weaver ant, which binds leaves and twigs with silk to form a neat, tent-like nest. In the beginning, farmers made do with the odd ants' nests here and there. But it wasn't long before growing demand led to the development of a thriving trade in nests and a new type of agriculture — ant farming.

For an insect that bites, the yellow citrus ant is remarkably popular. Even by ant standards, Oecophylla smaragdina is a fearsome predator. It's big, runs fast and has a powerful nip — painful to humans but lethal to many of the insects that plague the orange groves of Guangdong and Guangxi in southern China. And for at least 17 centuries, Chinese orange growers have harnessed these six-legged killing machines to keep their fruit groves healthy and productive.

Citrus fruits evolved in the Far East and the Chinese discovered the delights of their flesh early on. As the ancestral home of oranges, lemons and pomelos, China also has the greatest diversity of citrus pests. And the trees that produce the sweetest fruits, the mandarins — or kan — attract a host of plant-eating insects, from black ants and sap-sucking mealy bugs to leaf-devouring caterpillars. With so many enemies, fruit growers clearly had to have some way of protecting their orchards.

The West did not discover the Chinese orange growers' secret weapon until the early 20th century. At the time, Florida was suffering an epidemic of citrus canker and in 1915 Walter Swingle, a plant physiologist working for the US Department of Agriculture, was sent to China in search of varieties of orange that were resistant to the disease. Swingle spent some time studying the citrus orchards around Guangzhou, and there he came across the story of the cultivated ant. These ants, he was told, were "grown" by the people of a small village nearby who sold them to the orange growers by the nestful.

The earliest report of citrus ants at work among the orange trees appeared in a book on tropical and subtropical botany written by Hsi Han in AD 304. "The people of Chiao-Chih sell in their markets ants in bags of rush matting. The nests are like silk. The bags are all attached to twigs and leaves which, with the ants inside the nests, are for sale. The ants are reddish-yellow in colour, bigger than ordinary ants. In the south if the kan trees do not have this kind of ant, the fruits will all be damaged by many harmful insects, and not a single fruit will be perfect."

Initially, farmers relied on nests which they collected from the wild or bought in the market — where trade in nests was brisk. "It is said that in the south orange trees which are free of ants will have wormy fruits. Therefore the people race to buy nests for their orange trees," wrote Liu Hsun in *Strange Things Noted in the South*, written in about 890.

The business quickly became more sophisticated. From the 10th century, country people began to trap ants in artificial nests baited with fat. "Fruit-growing families buy these ants from vendors who make a business of collecting and selling such creatures," wrote Chuang Chi-Yu in 1130. "They trap them by filling hogs' or sheep's bladders with fat and placing them with the cavities open next to the ants' nests. They wait until the ants have migrated into the bladders and take them away. This is known as 'rearing orange ants'." Farmers attached the bladders to their trees, and in time the ants spread to other trees and built new nests.

By the 17th century, growers were building bamboo walkways between their trees to speed the colonisation of their orchards. The ants ran along these narrow bridges from one tree to another and established nests "by the hundreds of thousands".

Did it work? The orange growers clearly thought so. One authority, Chhii Ta-Chun, writing in 1700, stressed how important it was to keep the fruit trees free of insect pests, especially caterpillars. "It is essential to eliminate them so that the trees are not injured. But hand labour is not nearly as efficient as ant power..."

Swingle was just as impressed. Yet despite his reports, many Western biologists were sceptical. In the West, the idea of using one insect to destroy another was new and highly controversial. The first breakthrough had come in 1888, when the infant orange industry in California had been saved from extinction by the Australian vedalia beetle. This beetle was the only thing that had made any inroad into the explosion of cottony cushion scale that was threatening to destroy the state's citrus crops. But, as Swingle now knew, California's "first" was nothing of the sort. The Chinese had been expert in biocontrol for many centuries.

The long tradition of ants in the Chinese orchards only began to waver in the 1950s and 1960s with the introduction of powerful organic insecticides. Although most fruit growers switched to chemicals, a few hung onto their ants. Those who abandoned ants in favour of chemicals quickly became disillusioned. As costs soared and pests began to develop resistance to the chemicals, growers began to revive the old ant patrols. They had good reason to have faith in their insect workforce.

Research in the early 1960s showed that as long as there were enough ants in the trees, they did an excellent job of dispatching some pests — mainly the larger insects — and had modest success against others. Trees with yellow ants produced almost 20 per cent more healthy leaves than those without. More recent trials have shown that these trees yield just as big a crop as those protected by expensive chemical sprays.

One apparent drawback of using ants — and one of the main reasons for the early scepticism by Western scientists — was that citrus ants do nothing to control mealy bugs, waxy-coated scale insects which can do considerable damage to fruit trees. In fact, the ants protect mealy bugs in exchange for the sweet honeydew they secrete. The orange growers always denied this was a problem but Western scientists thought they knew better.

Research in the 1980s suggests that the growers were right all along. Where mealy bugs proliferate under the ants' protection they are usually heavily parasitized and this limits the harm they can do.

Orange growers who rely on carnivorous ants rather than poisonous chemicals maintain a better balance of species in their orchards. While the ants deal with the bigger insect pests, other predatory species keep down the numbers of smaller pests such as scale insects and aphids. In the long run, ants do a lot less damage than chemicals — and they're certainly more effective than excommunication.

Questions 14-18

Look at the following events (Questions 14-18) and the list of dates below.

*Match each event with the correct time **A-G**.*

*Write the correct letter **A-G** in boxes 14-18 on your answer sheet.*

14 The first description of citrus ants being traded in the market place.

15 Swingle came to Asia for research.

16 The first record of one insect is used to tackle other insects in the western world.

17 Chinese fruit growers started to use pesticides in place of citrus ants.

18 Some Chinese farmers returned to the traditional bio-method.

List of Dates

A	1888
B	AD 890
C	AD 304
D	1950s
E	1960s
F	1915
G	1130

Questions 19-26

Do the following statements agree with the information given in Reading Passage 2?

In boxes 19-26 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

19 China has more orange pests than any other country in the world.

20 Swingle came to China to search for an insect to bring back to the US.

21 Many people were very impressed by Swingle's discovery.

22 Chinese farmers found that pesticides became increasingly expensive.

23 Some Chinese farmers abandoned the use of pesticide.

24 Trees with ants had more leaves fall than those without.

25 Fields using ants yield as large crop as fields using chemical pesticides.

26 Citrus ants often cause considerable damage to the bio-environment of the orchards.

READING PASSAGE 3

*You should spend about 20 minutes on **Questions 27-40** which are based on Reading Passage 3 on the following page.*

Questions 27-31

Reading Passage 3 has five sections **A-E**.

Choose the correct heading for each section from the list of headings below.

*Write the correct number **i-viii** in boxes 27-31 on your answer sheet.*

List of Headings

i	Communication in music with animals
ii	New discoveries on animal music
iii	Music and language contrasted
iv	Current research on music
v	Music is beneficial for infants.
vi	Music transcends cultures.
vii	Look back at some of the historical theories
viii	Are we genetically designed for music?

27 Section **A**

28 Section **B**

29 Section **C**

30 Section **D**

31 Section **E**

Music: Language We All Speak

Section A

Music is one of the human specie's relatively few universal abilities. Without formal training, any individual, from Stone Age tribesman to suburban teenager, has the ability to recognize music and, in some fashion, to make it. Why this should be so is a mystery. After all, music isn't necessary for getting through the day, and if it aids in reproduction, it does so only in highly indirect ways. Language, by contrast, is also everywhere — but for reasons that are more obvious. With language, you and the members of your tribe can organize a migration across Africa, build reed boats and cross the seas, and communicate at night even when you can't see each other. Modern culture, in all its technological extravagance, springs directly from the human talent for manipulating symbols and syntax.

Scientists have always been intrigued by the connection between music and language. Yet over the years, words and melody have acquired a vastly different status in the lab and the seminar room. While language has long been considered essential to unlocking the mechanisms of human intelligence, music is generally treated as an evolutionary frippery — mere "auditory cheesecake," as the Harvard cognitive scientist Steven Pinker puts it.

Section B

But thanks to a decade-long wave of neuroscience research, that tune is changing. A flurry of recent publications suggests that language and music may equally be able to tell us who we are and where we're from — not just emotionally, but biologically. In July, the journal *Nature Neuroscience* devoted a special issue to the topic. And in an article in the August 6 issue of the *Journal of Neuroscience*, David Schwartz, Catherine Howe, and Dale Purves of Duke University argued that the sounds of music and the sounds of language are intricately connected.

To grasp the originality of this idea, it's necessary to realize two things about how music has traditionally been understood. First, musicologists have long emphasized that while each culture stamps a special identity onto its music, music itself has some universal qualities. For example, in virtually all cultures sound is divided into some or all of the 12 intervals that make up the chromatic scale — that is, the scale represented by the keys on a piano. For centuries, observers have attributed this preference for certain combinations of tones to the mathematical properties of sound itself.

Some 2,500 years ago, Pythagoras was the first to note a direct *relationship*

between the harmoniousness of a tone combination and the physical dimensions of the object that produced it. For example, a plucked string will always play an octave lower than a similar string half its size, and a fifth lower than a similar string two-thirds its length. This link between simple ratios and harmony has influenced music theory ever since.

Section C

This music-is-math idea is often accompanied by the notion that music, formally speaking at least, exists apart from the world in which it was created. Writing recently in *The New York Review of Books*, pianist and critic Charles Rosen discussed the long-standing notion that while painting and sculpture reproduce at least some aspects of the natural world, and writing describes thoughts and feelings we are all familiar with, music is entirely abstracted from the world in which we live. Neither idea is right, according to David Schwartz and his colleagues. Human musical preferences are fundamentally shaped not by elegant algorithms or ratios but by the messy sounds of real life, and of speech in particular — which in turn is shaped by our evolutionary heritage. "The explanation of music, like the explanation of any product of the mind, must be rooted in biology, not in numbers per se," says Schwartz.

Schwartz, Howe, and Purves analyzed a vast selection of speech sounds from a variety of languages to reveal the underlying patterns common to all utterances. In order to focus only on the raw sound, they discarded all theories about speech and meaning and sliced sentences into random bites. Using a database of over 100,000 brief segments of speech, they noted which frequency had the greatest emphasis in each sound. The resulting set of frequencies, they discovered, corresponded closely to the chromatic scale. In short, the building blocks of music are to be found in speech.

Far from being abstract, music presents a strange analog to the patterns created by the sounds of speech. "Music, like the visual arts, is rooted in our experience of the natural world," says Schwartz. "It emulates our sound environment in the way that visual arts emulate the visual environment." In music we hear the echo of our basic sound-making instrument — the vocal tract. The explanation for human music is simpler still than Pythagoras's mathematical equations: We like the sounds that are familiar to us — specifically, we like sounds that remind us of us.

This brings up some chicken-or-egg evolutionary questions. It may be that music imitates speech directly, the researchers say, in which case it would seem that language evolved first. It's also conceivable that music came first and language is in effect an imitation of song — that in everyday speech we hit the musical notes we especially like. Alternately, it may be that music imitates the general products of the human sound-making system, which just happens to be mostly speech. "We

can't know this," says Schwartz. "What we do know is that they both come from the same system, and it is this that shapes our preferences."

Section D

Schwartz's study also casts light on the long-running question of whether animals understand or appreciate music. Despite the apparent abundance of "music" in the natural world — birdsong, whalesong, wolf howls, synchronized chimpanzee hooting — previous studies have found that many laboratory animals don't show a great affinity for the human variety of music making.

Marc Hauser and Josh McDermott of Harvard argued in the July issue of *Nature Neuroscience* that animals don't create or perceive music the way we do. The fact that laboratory monkeys can show recognition of human tunes is evidence, they say, of shared general features of the auditory system, not any specific chimpanzee musical ability. As for birds, those most musical beasts, they generally recognize their own tunes — a narrow repertoire — but don't generate novel melodies like we do. There are no avian Mozarts.

But what's been played to the animals, Schwartz notes, is human music. If animals evolve preferences for sound as we do — based upon the soundscape in which they live — then their "music" would be fundamentally different from ours. In the same way our scales derive from human utterances, a cat's idea of a good tune would derive from yowls and meows. To demonstrate that animals don't appreciate sounds the way we do, we'd need evidence that they don't respond to "music" constructed from their own sound environment.

Section E

No matter how the connection between language and music is parsed, what is apparent is that our sense of music, even our love for it, is as deeply rooted in our biology and in our brains as language is. This is most obvious with babies, says Sandra Trehub at the University of Toronto, who also published a paper in the *Nature Neuroscience* special issue.

For babies, music and speech are on a continuum. Mothers use musical speech to "regulate infants' emotional states," Trehub says. Regardless of what language they speak, the voice all mothers use with babies is the same: "something between speech and song." This kind of communication "puts the baby in a trance-like state, which may proceed to sleep or extended periods of rapture." So if the babies of the world could understand the latest research on language and music, they probably wouldn't be very surprised. The upshot, says Trehub, is that music may be even more of a necessity than we realize.

Questions 32-38

Look at the following people and list of statements below.

Match each person with the correct statement.

*Write the correct letter **A-G** in boxes 32-38 on your answer sheet.*

32 Steven Pinker

33 Musicologists

34 Greek philosopher Pythagoras

35 Schwartz, Howe, and Purves

36 Marc Hauser and Josh McDermott

37 Charles Rosen

38 Sandra Trehub

List of Statements

A Music exists outside of the world it is created in.

B Music has a universal character despite cultural influences on it.

C Music is a necessity for humans.

D Music preference is related to the surrounding influences.

E He discovered the mathematical basis of music.

F Music doesn't enjoy the same status of research interest as language.

G Humans and monkeys have similar traits in perceiving sound.

Questions 39-40

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 39-40 on your answer sheet.

39 Why was the study of animal's music inconclusive?

A Animals don't have same auditory system as humans.

B Tests on animal's music are limited.

C Animals can't make up new tunes.

D There aren't enough tests on a wide range of animals.

40 What is the main theme of this passage?

A Language and learning.

B The evolution of music.

C The role of music in human society.

D Music for animals.

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Test 5

READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-13*** *which are based on Reading Passage 1 below.*

WONDER PLANT

The wonder plant with an uncertain future: more than a billion people rely on bamboo for either their shelter or income, while many endangered species depend on it for their survival. Despite its apparent abundance, a new report says that many species of bamboo may be under serious threat.

Section A

Every year, during the rainy season, the mountain gorillas of Central Africa migrate to the foothills and lower slopes of the Virunga Mountains to graze on bamboo. For the 650 or so that remain in the wild, it's a vital food source. Although they eat almost 150 types of plant, as well as various insects and other invertebrates, at this time of year bamboo accounts for up to 90 per cent of their diet. Without it, says Ian Redmond, chairman of the Ape Alliance, their chances of survival would be reduced significantly.

Gorillas aren't the only locals keen on bamboo. For the people who live close to the Virungas, it's a valuable and versatile raw material used for building houses and making household items such as mats and baskets. But in the past 100 years or so, resources have come under increasing pressure as populations have exploded and large areas of bamboo forest have been cleared to make way for farms and commercial plantations.

Section B

Sadly, this isn't an isolated story. All over the world, the ranges of many bamboo species appear to be shrinking, endangering the people and animals that depend upon them. But despite bamboo's importance, we know surprisingly little about it. A recent report published by the UN Environment Programme (UNEP) and the International Network for Bamboo and Rattan (INBAR) has revealed just how profound is our ignorance of global bamboo resources, particularly in relation to conservation.

There are almost 1,600 recognised species of bamboo, but the report concentrated on the 1,200 or so woody varieties distinguished by the strong stems, or culms, that most people associate with this versatile plant. Of these, only 38 'priority species' identified for their commercial value have been the subject of any real scientific research, and this has focussed mostly on matters relating to their viability as a commodity.

This problem isn't confined to bamboo. Compared to the work carried out on animals, the science of assessing the conservation status of plants is still in its infancy. "People have only started looking hard at this during the past 10-15 years, and only now are they getting a handle on how to go about it systematically," says Dr. Valerie Kapos, one of the report's authors and a senior adviser in forest ecology and conservation to the UNEP.

Section C

Bamboo is a type of grass. It comes in a wide variety of forms, ranging in height from 30 centimetres to more than 40 metres. It is also the world's fastest-growing woody plant; some species can grow more than a metre in a day. Bamboo's ecological role extends beyond providing food and habitat for animals. Bamboo tends to grow in stands made up of groups of individual plants that grow from root systems known as rhizomes. Its extensive rhizome systems, which lie in the top layers of the soil, are crucial in preventing soil erosion. And there is growing evidence that bamboo plays an important part in determining forest structure and dynamics. "Bamboo's pattern of mass flowering and mass death leaves behind large areas of dry biomass that attract wildfire," says Kapos. "When these burn, they create patches of open ground within the forest far bigger than would be left by a fallen tree." Patchiness helps to preserve diversity because certain plant species do better during the early stages of regeneration when there are gaps in the canopy.

Section D

However, bamboo's most immediate significance lies in its economic value. Modern processing techniques mean that it can be used in a variety of ways, for example, as flooring and laminates. One of the fastest growing bamboo products is paper — 25 per cent of paper produced in India is made from bamboo fibre, and in Brazil, 100,000 hectares of bamboo are grown for its production.

Of course, bamboo's main function has always been in domestic applications, and as a locally traded commodity it's worth about US$4.5billion annually. Because of its versatility, flexibility and strength (its tensile strength compares to that of some steel), it has traditionally been used in construction. Today, more than one billion people worldwide live in bamboo houses. Bamboo is often the only readily available raw material for people in many developing countries, says Chris Stapleton, a research associate at the Royal Botanic Gardens. "Bamboo can be harvested

from forest areas or grown quickly elsewhere, and then converted simply without expensive machinery or facilities," he says. "In this way, it contributes substantially to poverty alleviation and wealth creation."

Section E

Given bamboo's value in economic and ecological terms, the picture painted by the UNEP report is all the more worrying. But keen horticulturists will spot an apparent contradiction here. Those who've followed the recent vogue for cultivating exotic species in their gardens will point out that if it isn't kept in check, bamboo can cause real problems. "In a lot of places, the people who live with bamboo don't perceive it as being endangered in any way," says Kapos. "In fact, a lot of bamboo species are actually very invasive if they've been introduced." So why are so many species endangered?

There are two separate issues here, says Ray Townsend, vice president of the British Bamboo Society and arboretum manager at the Royal Botanic Gardens. "Some plants are threatened because they can't survive in the habitat – they aren't strong enough or there aren't enough of them, perhaps. But bamboo can take care of itself – it is strong enough to survive if left alone. What is under threat is its habitat." It is the physical disturbance that is the threat to bamboo, says Kapos. "When forest goes, it is converted into something else: there isn't anywhere for forest plants such as bamboo to grow if you create a cattle pasture."

Section F

Around the world, bamboo species are routinely protected as part of forest ecosystems in national parks and reserves, but there is next to nothing that protects bamboo in the wild for its own sake. However, some small steps are being taken to address this situation. The UNEP-INBAR report will help conservationists to establish effective measures aimed at protecting valuable wild bamboo species.

Townsend, too, sees the UNEP report as an important step forward in promoting the cause of bamboo conservation. "Until now, bamboo has been perceived as a second-class plant. When you talk about places such as the Amazon, everyone always thinks about the hardwoods. Of course these are significant, but there is a tendency to overlook the plants they are associated with, which are often bamboo species. In many ways, it is the most important plant known to man. I can't think of another plant that is used so much and is so commercially important in so many countries." He believes that the most important first step is to get scientists into the field. "We need to go out there, look at these plants and see how they survive and then use that information to conserve them for the future."

Questions 1-7

Reading Passage 1 has six sections **A-F**.

Which section contains the following information?

*Write the correction letter **A-F** in boxes 1-7 on your answer sheet.*

NB *You may use any letter more than once.*

1 Comparison of bamboo with other plant species
2 Commercial products of bamboo
3 Limited extent of existing research
4 A human development that destroyed large areas of bamboo
5 How bamboos are put to a variety of uses
6 An explanation of how bamboo can help the survival of a range of plants
7 The methods used to study bamboo

Questions 8-11

Look at the following statements (Questions 8-11) and the list of people below.

*Match each statement with the correct person, **A**, **B**, **C** or **D**.*

*Write the correct letter, **A**, **B**, **C** or **D**, in boxes 8-11 on your answer sheet.*

8 Destroying bamboo poses threat to wildlife.
9 People have very limited knowledge of bamboo.
10 Some people think bamboo is not really endangered.
11 Bamboo has immeasurable commercial potentials.

List of People

A Ian Redmond
B Valerie Kapos
C Ray Townsend
D Chris Stapleton

Questions 12-13

*Answer the questions below using **NO MORE THAN TWO WORDS** from the passage for each answer.*

Write your answers in boxes 12-13 on your answer sheet.

12 What environmental problem does the unique root system of bamboo prevent?

13 Which bamboo product is experiencing market expansion?

READING PASSAGE 2

You should spend about 20 minutes on ***Questions 14-26*** *which are based on Reading Passage 2 below.*

CHILDREN'S LITERATURE

Stories and poems aimed at children have an exceedingly long history: lullabies, for example, were sung in Roman times, and a few nursery games and rhymes are almost as ancient. Yet so far as written-down literature is concerned, while there were stories in print before 1700 that children often seized on when they had the chance, such as translations of Aesop's fables, fairy-stories and popular ballads and romances, these were not aimed at young people in particular. Since the only genuinely child-oriented literature at this time would have been a few instructional works to help with reading and general knowledge, plus the odd Puritanical tract as an aid to morality, the only course for keen child readers was to read adult literature. This still occurs today, especially with adult thrillers or romances that include more exciting, graphic detail than is normally found in the literature for younger readers.

By the middle of the 18th century there were enough eager child readers, and enough parents glad to cater to this interest, for publishers to specialize in children's books whose first aim was pleasure rather than education or morality. In Britain, a London merchant named Thomas Boreham produced *Cajanus, The Swedish Giant* in 1742, while the more famous John Newbery published *A Little Pretty Pocket Book* in 1744. Its contents — rhymes, stories, children's games plus a free gift ('A ball and a pincushion') — in many ways anticipated the similar lucky-dip contents of children's annuals this century. It is a tribute to Newbery's flair that he hit upon a winning formula quite so quickly, to be pirated almost immediately in America.

Such pleasing levity was not to last. Influenced by Rousseau, whose *Emile* (1762) decreed that all books for children save *Robinson Crusoe* were a dangerous diversion, contemporary critics saw to it that children's literature should be instructive and uplifting. Prominent among such voices was Mrs. Sarah Trimmer, whose magazine *The Guardian of Education* (1802) carried the first regular reviews of children's books. It was she who condemned fairy-tales for their violence and general absurdity; her own stories, *Fabulous Histories* (1786) described talking animals who were always models of sense and decorum.

So the moral story for children was always threatened from within, given the way children have of drawing out entertainment from the sternest moralist. But the greatest blow to the improving children's book was to come from an unlikely source indeed: early 19th-century interest in folklore. Both nursery rhymes, selected by James Orchard Halliwell for a folklore society in 1842, and collection of fairy-stories by the scholarly Grimm brothers, swiftly translated into English in 1823, soon rocket to popularity with the young, quickly leading to new editions, each one more child-centered than the last. From now on younger children could expect stories written for their particular interest and with the needs of their own limited experience of life kept well to the fore.

What eventually determined the reading of older children was often not the availability of special children's literature as such but access to books that contained characters, such as young people or animals, with whom they could more easily empathize, or action, such as exploring or fighting, that made few demands on adult maturity or understanding.

The final apotheosis of literary childhood as something to be protected from unpleasant reality came with the arrival in the late 1930s of child-centered best-sellers intent on entertainment at its most escapist. In Britain novelist such as Enid Blyton and Richmal Crompton described children who were always free to have the most unlikely adventures, secure in the knowledge that nothing bad could ever happen to them in the end. The fact that war broke out again during her books' greatest popularity fails to register at all in the self-enclosed world inhabited by Enid Blyton's young characters. Reaction against such dream-worlds was inevitable after World War II, coinciding with the growth of paperback sales, children's libraries and a new spirit of moral and social concern. Urged on by committed publishers and progressive librarians, writers slowly began to explore new areas of interest while also shifting the settings of their plots from the middle-class world to which their chiefly adult patrons had always previously belonged.

Critical emphasis, during this development, has been divided. For some the most important task was to rid children's books of the social prejudice and exclusiveness no longer found acceptable. Others concentrated more on the positive achievements of contemporary children's literature. That writers of these works are now often recommended to the attentions of adult as well as child readers echoes the 19th-century belief that children's literature can be shared by the generations, rather than being a defensive barrier between childhood and the necessary growth towards adult understanding.

Questions 14-18

Complete the table below.

*Choose **NO MORE THAN TWO WORDS** from Reading Passage 2 for each answer.*

Write your answers in boxes 14-18 on your answer sheet.

DATE	FEATURES	AIM	EXAMPLE
Before 1700	Not aimed at young children	Education and morality	Puritanical tract
By the middle of 18th century	Collection of **14** _____ and games	Read for pleasure	*A Little Pretty Pocket Book* (exported to **15** _____)
Early 19th century	Growing interest in **16** _____	To be more children-centered	Nursery rhymes and **17** _____
Late 1930s	Stories of harm-free **18** _____	Entertainment	Enid Blyton and Richmal Crompton's novels

Questions 19-21

Look at the following people and the list of statements below.

Match each person with the correct statement.

*Write the correct letter **A-E** in boxes 19-21 on your answer sheet.*

19 Thomas Boreham

20 Mrs. Sarah Trimmer

21 Grimm Brothers

List of Statements	
A	Wrote criticisms of children's literature
B	Used animals to demonstrate the absurdity of fairy tales
C	Was not a writer originally
D	Translated a book into English
E	Didn't write in the English language

Questions 22-26

Do the following statements agree with the information given in Reading Passage 2?

In boxes 22-26 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

22 Children didn't start to read books until 1700.

23 Sarah Trimmer believed that children's books should set good examples.

24 Parents were concerned about the violence in children's books.

25 An interest in the folklore changed the direction of the development of children's books.

26 Today children's book writers believe their works should appeal to both children and adults.

READING PASSAGE 3

You should spend about 20 minutes on ***Questions 27-40*** *which are based on Reading Passage 3 below.*

Talc Powder

Peter Brigg discovers how talc from Luzenac's Trimouns in France find its way into food and agricultural products — from chewing gum to olive oil.

High in the French Pyrenees, some 1,700m above sea level, lies Trimouns, a huge deposit of hydrated magnesium silicate — talc to you and me. Talc from Trimouns, and from ten other Luzenac mines across the globe, is used in the manufacture of a vast array of everyday products extending from paper, paint and plaster to cosmetics, plastics and car tyres. And of course there is always talc's best known end use: talcum powder for babies' bottoms. But the true versatility of this remarkable mineral is nowhere better displayed than in its sometimes surprising use in certain niche markets in the food and agriculture industries.

Take, for example, the chewing gum business. Every year, Talc de Luzenac France — which owns and operates the Trimouns mine and is a member of the international Luzenac Group (part of Rio Tinto Minerals) — supplies about 6,000 tonnes of talc to chewing gum manufacturers in Europe. "We've been selling to this sector of the market since the 1960s," says Laurent Fournier, sales manager in Luzenac's Specialties business unit in Toulouse. "Admittedly, in terms of our total annual sales of talc, the amount we supply to chewing gum manufacturers is relatively small, but we see it as a valuable niche market: one where customers place a premium on securing supplies from a reliable, high quality source. Because of this, long term allegiance to a proven supplier is very much a feature of this sector of the talc market. "Switching sources — in the way that you might choose to buy, say, paperclips from Supplier A rather than from Supplier B — is not a easy option for chewing gum manufacturers," Fournier says. "The cost of reformulating is high, so when customers are using a talc grade that works, even if it's expensive, they are understandably reluctant to switch."

But how is talc actually used in the manufacture of chewing gum? Patrick Delord, an engineer with a degree in agronomics, who has been with Luzenac for 22 years and is now senior market development manager, Agriculture and Food, in Europe, explains that chewing gum has four main components. "The most important of them is the gum base," he says. "It's the gum base that puts the chew into chewing gum. It binds all the ingredients together, creating a soft, smooth texture. To this the manufacturer then adds sweeteners, softeners and flavourings. Our talc is used as a filler in the gum base. The amount varies between, say, ten and 35 per cent, depending on the type of gum. Fruit flavoured chewing gum, for example, is slightly acidic and would react with the calcium carbonate that the manufacturer might otherwise use as a filler. Talc, on the other hand, makes an ideal filler because it's non-reactive chemically. In the factory, talc is also used to dust the gum base pellets and to stop the chewing gum sticking during the lamination and packing processes," Delord adds.

The chewing gum business is, however, just one example of talc's use in the food sector. For the past 20 years or so, olive oil processors in Spain have been taking advantage of talc's unique characteristics to help them boost the amount of oil they extract from crushed olives. According to Patrick Delord, talc is especially useful for treating what he calls "difficult" olives. After the olives are harvested — preferably early in the morning because their taste is better if they are gathered in the cool of the day — they are taken to the processing plant. There they are crushed and then stirred for 30-45 minutes. In the old days, the resulting paste was passed through an olive press but nowadays it's more common to add water and centrifuge the mixture to separate the water and oil from the solid matter. The oil and water are then allowed to settle so that the olive oil layer can be decanted off and bottled. "Difficult" olives are those that are more reluctant than the norm to yield up their full oil content. This may be attributable to the particular species of olive, or to its water content and the time of year the olives are collected — at the beginning and the end of the season their water content is often either too high or too low. These olives are easy to recognize because they produce a lot of extra foam during the stirring process, a consequence of an excess of a fine solid that acts as a natural emulsifier. The oil in this emulsion is lost when the water is disposed of. Not only that, if the waste water is disposed of directly into local fields — often the case in many smaller processing operations — the emulsified oil may take some time to biodegrade and so be harmful to the environment.

"If you add between a half and two per cent of talc by weight during the stirring process, it absorbs the natural emulsifier in the olives and so boosts the amount of oil you can

extract," says Delord. "In addition, talc's flat, 'platey' structure helps increase the size of the oil droplets liberated during stirring, which again improves the yield. However, because talc is chemically inert, it doesn't affect the colour, taste, appearance or composition of the resulting olive oil."

If the use of talc in olive oil processing and in chewing gum is long established, new applications in the food and agriculture industries are also constantly being sought by Luzenac. One such promising new market is fruit crop protection, being pioneered in the US. Just like people, fruit can get sunburned. In fact, in very sunny regions up to 45 per cent of a typical crop can be affected by heat stress and sunburn. However, in the case of fruit, it's not so much the ultra violet rays which harm the crop as the high surface temperature that the sun's rays create.

To combat this, farmers normally use either chemicals or spray a continuous fine canopy of mist above the fruit trees or bushes. The trouble is, this uses a lot of water — normally a precious commodity in hot, sunny areas — and it is therefore expensive. What's more, the ground can quickly become waterlogged. "So our idea was to coat the fruit with talc to protect it from the sun," says Greg Hunter, a marketing specialist who has been with Luzenac for ten years. "But to do this, several technical challenges had first to be overcome. Talc is very hydrophobic: it doesn't like water. So in order to have a viable product we needed a wettable powder — something that would go readily into suspension so that it could be sprayed onto the fruit. It also had to break the surface tension of the cutin (the natural waxy, waterproof layer on the fruit) and of course it had to wash off easily when the fruit was harvested. No-one's going to want an apple that's covered in talc."

Initial trials in the State of Washington in 2003 showed that when the product was sprayed onto Granny Smith apples, it reduced their surface temperature and lowered the incidence of sunburn by up to 60 per cent. Today the new product, known as Invelop® Maximum SPF, is in its second commercial year on the US market. Apple growers are the primary target although Hunter believes grape growers represent another sector with long term potential. He is also hopeful of extending sales to overseas markets such as Australia, South America and southern Europe.

Questions 27-32

Classify the following uses of talc power as referring to

A *Chewing gum manufacture*
B *Olive oil extraction*
C *Fruit crop protection*

*Write the correct letter **A**, **B** or **C** in boxes 27-32 on your answer sheet.*

27 Talc is used to prevent foaming.
28 Talc is used to prevent stickiness.
29 Talc is used to boost production.
30 Talc is used as a filler to provide a base.
31 Talc is used to prevent sunburn.
32 Talc is used to help increase the size of the product.

Questions 33-38

*Complete the summary below using **NO MORE THAN TWO WORDS** from the passage.*

Write your answers in boxes 33-38 on your answer sheet.

The use of talc powder in olive oil industry in Spain has been around for **33** _____ years. It is extremely useful in dealing with difficult olives which often produce a lot of **34** _____ due to the high content of solid matters.

The traditional method of oil extraction used in some smaller plants often produces **35** _____, which contains emulsified oil, and if it is directly disposed of it may be **36** _____ to the environment, because it cannot **37** _____. But adding talc power can absorb the emulsifier and increase the production, because the size of oil **38** _____ grows.

Questions 39-40

*Answer the questions below using **NO MORE THAN TWO WORDS** from the passage for each answer.*

Write your answers in boxes 39-40 on your answer sheet.

39 What are the last two stages of chewing gum manufacturing process?

40 Which group of farmers does Invelop® intend to target?

Test 6

READING PASSAGE 1

You should spend about 20 minutes on ***Questions 1-13*** *which are based on Reading Passage 1 below.*

The Sweet Scent of Success

Many innovations end up as lemons — OzKleen turned lemons into a winning formula.

A Innovation and entrepreneurship, in the right mix, can bring spectacular results and propel a business ahead of the pack. Across a diverse range of commercial successes, from the Hills Hoist clothes line to the Cochlear ear implant, it is hard to generalize beyond saying the creators tapped into something consumers could not wait to get their hands on. However, most ideas never make it to the market. Some ideas that innovators are spruiking to potential investors include new water-saving shower heads, a keyless locking system, ping-pong balls that keep pollution out of rainwater tanks, making teeth grow from stem cells inserted in the gum, and technology to stop LPG tanks from exploding. Grant Kearney, chief executive of the Innovation Xchange, which connects businesses to innovation networks, says he hears of great business ideas that he knows will never get on the market. "Ideas by themselves are absolutely useless," he says. "An idea only becomes innovation when it is connected to the right resources and capabilities."

B One of Australia's latest innovation successes stems from a lemon-scented bathroom cleaner called Shower Power, the formula for which was concocted in a factory in Yatala, Queensland. In 1995, Tom Quinn and John Heron bought a struggling cleaning products business, OzKleen, for 250,000. It was selling 100 different kinds of cleaning products, mainly in bulk. The business was in bad shape, the cleaning formulas were ineffective and environmentally harsh, and there were few regular clients. Now Shower Power is claimed to be the

top-selling bathroom cleaning product in the country. In the past 12 months, almost four million bottles of OzKleen's Power products have been sold and the company forecasts 2004 sales of 10 million bottles. The company's sales in 2003 reached $11 million, with 70% of business being exports. In particular, Shower Power is making big inroads on the British market.

C OzKleen's turnaround began when Quinn and Heron hired an industrial chemist to revitalize the product line. Market research showed that people were looking for a better cleaner for the bathroom, universally regarded as the hardest room in the home to clean. The company also wanted to make the product formulas more environmentally friendly. One of Tom Quinn's sons, Peter, aged 24 at the time, began working with the chemist on the formulas, looking at the potential for citrus-based cleaning products. He detested all the chlorine-based cleaning products that dominated the market. "We didn't want to use chlorine, simple as that," he says. "It offers bad working conditions and there's no money in it." Peter looked at citrus ingredients, such as orange peel, to replace the petroleum by-products in cleaners. He is credited with finding the Shower Power formula. "The recipe is in a vault somewhere and in my head," he says. The company is the sole owner of the intellectual property.

D To begin with, Shower Power was sold only in commercial quantities but Tom Quinn decided to sell it in 750ml bottles after the constant "raves" from customers at their retail store at Beenleigh, near Brisbane. Customers were travelling long distances to buy supplies. Others began writing to OzKleen to say how good Shower Power was. "We did a dummy label and went to see Woolworths," Tom Quinn says. The Woolworths buyer took a bottle home and was able to remove a stain from her basin that had been impossible to shift. From that point on, she championed the product and OzKleen had its first supermarket order, for a palette of Shower Power worth $3000. "We were over the moon," says OzKleen's financial controller, Belinda McDonnell.

E Shower Power was released in Australian supermarkets in 1997 and became the top-selling product in its category within six months. It was all hands on deck at the factory, labeling and bottling Shower Power to keep up with demand. OzKleen ditched all other products and rebuilt the business around Shower Power. This stage, recalls McDonnell, was very tough. "It was hand-to-mouth, cashflow was very difficult," she says. OzKleen had to pay new-line fees to supermarket chains, which also squeezed margins.

F OzKleen's next big break came when the daughter of a Coles Myer executive used the product while on holidays in Queensland and convinced her father

that Shower Power should be in Coles supermarkets. Despite the product success, Peter Quinn says the company was wary of how long the sales would last and hesitate to spend money on upgrading the manufacturing process. As a result, he remembers long periods of working around the clock to keep up with orders. Small tanks were still being used so batches were small and bottles were labeled and filled manually. The privately owned OzKleen relied on cash-flow to expand. "The equipment could not keep up with demand," Peter Quinn says. Eventually a new bottling machine was bought for $50,000 in the hope of streamlining production, but he says: "We got ripped off." Since then he has been developing a new automated bottling machine that can control the amount of foam produced in the liquid, so that bottles can be filled more effectively — "I love coming up with new ideas." The machine is being patented.

G Peter Quinn says OzKleen's approach to research and development is open slather. "If I need it, I get it. It is about doing something simple that no one else is doing. Most of these things are jus sitting in front of people ... it's just seeing the opportunities." With a tried and tested product, OzKleen is expanding overseas and developing more Power-brand household products. Tom Quinn, who previously ran a real estate agency, says: "We are competing with the same market all over the world, the (cleaning) products are sold everywhere." Shower Power, known as Bath Power in Britain, was launched four years ago with the help of an export development grand from the Federal Government. "We wanted to do it straight away because we realized we had the same opportunities worldwide." OzKleen is already number three in the British market, and the next stop is France. The Power range includes cleaning products for carpets, kitchens and pre-wash stain removal. The Quinn and Heron families are still involved. OzKleen has been approached with offers to buy the company, but Tom Quinn says he is happy with things as they are. "We're having too much fun."

Questions 1-7

Reading Passage 1 has seven paragraphs **A-G**.

Which paragraph contains the following information?

*Write the correct letter **A-G** in boxes 1-7 on your answer sheet.*

1 The description of one family member persuading another of selling cleaning products

2 An account of the cooperation of all factory staff to cope with sales increase

3 An account of the creation of the formula of Shower Power

4 An account of buying the original OzKleen company

5 The description of Shower Power's international expansion

6 The reason of changing the packaging size of Shower Power

7 An example of some innovative ideas

Questions 8-11

Look at the following people and list of statements below.

Match each person with the correct statement.

*Write the correct letter **A-E** in boxes 8-11 on your answer sheet.*

8 Grant Kearney

9 Tom Quinn

10 Peter Quinn

11 Belinda McDonnell

List of Statements

A	Described his story of selling his product to a chain store
B	Explained there was a shortage of money when sales suddenly increased
C	Thinks innovations need support to succeed
D	Believes new products like Shower Power may incur risks
E	Says businesses won't succeed without innovations

Questions 12-13

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in boxes 12-13 on your answer sheet.

12 Tom Quinn changed the bottle size to 750ml to make Shower Power

A easier to package.

B appealing to individual customers.

C popular in foreign markets.

D attractive to supermarkets.

13 Why did Tom Quinn decide not to sell OzKleen?

A No one wanted to buy OzKleen.

B New products were being developed in OzKleen.

C He couldn't make an agreement on the price with the buyer.

D He wanted to keep things unchanged.

READING PASSAGE 2

*You should spend about 20 minutes on **Questions 14-26** which are based on Reading Passage 2 below.*

Ms. Carlill and the Carbolic Smoke Ball

On 14 January 1892, Queen Victoria's grandson Prince Albert Victor, second in line to the British throne, died from flu. He had succumbed to the third and most lethal wave of the Russian flu pandemic sweeping the world. The nation was shocked. The people mourned. Albert was relegated to a footnote in history.

Three days later, London housewife Louisa Carlill went down with flu. She was shocked. For two months she had inhaled thrice daily from a carbolic smoke ball, a preventive measure guaranteed to fend off flu — if you believed the advert. Which she did. And why shouldn't she when the Carbolic Smoke Ball Company had promised to cough up £100 for any customer who fell ill. Unlike Albert, Louisa recovered, claimed her £100 and set in train events that would win her lasting fame.

IT STARTED in the spring of 1889. The first reports of a flu epidemic came from Russia. By the end of the year the world was in the grip of the first truly global flu pandemic. The disease came in waves, once a year for the next four years, and each worse than the last.

Whole cities came to a standstill. London was especially hard-hit. As the flu reached each annual peak, normal life stopped. The postal service ground to a halt, trains stopped running, banks closed. Even courts stopped sitting for lack of judges. At the height of the third wave in 1892, 200 people were buried every day at just one London cemetery. This flu was far more lethal than previous epidemics, and those who recovered were left weak, depressed and often unfit for work. It was a picture repeated across the continent.

Accurate figures for the number of sick and dead were few and far between but Paris, Berlin and Vienna all reported a huge upsurge in deaths. The newspapers took an intense interest in the disease, not just because of the scale of it but because of who it attacked. Most epidemics carried off the poor and weak, the old and frail. This flu was cutting as great a swathe through the upper classes, dealing death to the rich and famous and the young and fit.

The newspaper-reading public was fed a daily diet of celebrity victims. The flu had worked its way through the Russian imperial family and invaded the royal palaces of Europe. It carried off the Dowager Empress of Germany and the second son of the king of Italy, as well as England's future king. Aristocrats and politicians, poets and opera singers, bishops and

cardinals — none escaped the attentions of the Russian flu.

The public grew increasingly fearful. The press might have been overdoing the doom and gloom, but their hysterical coverage had exposed one terrible fact. The medical profession had no answer to the disease. This flu, which might not even have begun in Russia, was a mystery. What caused it and how did it spread? No one could agree on anything.

By now, the theory that micro-organisms caused disease was gaining ground, but no one had identified an organism responsible for flu (and wouldn't until 1933). In the absence of a germ, many clung to the old idea of bad airs, or miasmas, possibly stirred by some great physical force — earthquakes, perhaps, or electrical phenomena in the upper atmosphere, even a passing comet.

Doctors advised people to eat well, avoid "unnecessary assemblies" and if they were really worried, to stuff cotton wool up their nostrils. If they fell ill, they should rest, keep warm and eat a nourishing diet of "milk, eggs and farinaceous puddings". Alcohol figured prominently among the prescriptions: one eminent English doctor suggested champagne, although he conceded "brandy in considerable quantities has sometimes been given with manifest advantages". French doctors prescribed warm alcoholic drinks, arguing that they never saw an alcoholic with flu. Their prescription had immediate results: over a three-day period, 1200 of the 1500 drunks picked up on the streets of Paris claimed they were following doctor's orders.

Some doctors gave drugs to ease symptoms — quinine for fever, salicin for headache, heroin for an "incessant cough". But nothing in the pharmacy remotely resembled a cure. Not surprisingly, people looked elsewhere for help. Hoping to cash in while the pandemic lasted, purveyors of patent medicines competed for the public's custom with ever more outrageous advertisements. One of the most successful was the Carbolic Smoke Ball Company.

The carbolic smoke ball was a hollow rubber ball, 5 centimetres across, with a nozzle covered by gauze. Inside was a powder treated with carbolic acid, or phenol. The idea was to clutch it close to the nose and squeeze gently, inhaling deeply from the emerging cloud of pungent powder. This, the company claimed, would disinfect the mucous membranes, curing any condition related to "taking cold". In the summer of 1890 sales were steady at 300 smoke balls a month. In January 1891, the figure skyrocketed to 1500.

Eager to exploit the public's mounting panic, the Carbolic Smoke Ball Company made increasingly extravagant claims. On 13 November 1892, its latest advert in the Pall Mall Gazette caught the eye of south London housewife Louisa Carlill. "Carbolic Smoke Ball," it declared, "will positively cure" colds, coughs, asthma, bronchitis, hoarseness, influenza, croup, whooping cough … the list went on. But it was the next part Mrs. Carlill found compelling. "£100 reward will be paid by the Carbolic Smoke Ball Company to any person who contracts the increasing epidemic influenza, colds or any disease caused by taking cold, after having used the carbolic smoke ball according to the printed directions supplied with each

ball. £1000 is deposited with the Alliance bank, Regent Street, showing our sincerity in the matter."

Mrs. Carlill hurried off to buy a smoke ball, price 10 shillings. After carefully reading the instructions she diligently dosed herself thrice daily until 17 January — when she fell ill.

On 20 January, Louisa's husband wrote to the Carbolic Smoke Ball Company. Unfortunately for them, Mr. Carlill happened to be a solicitor. His wife, he wrote, had seen their advert and bought a smoke ball on the strength of it. She had followed the instructions to the letter, and yet now — as their doctor could confirm — she had flu.

There was no reply. But £100 was not a sum to be sneezed at. Mr. Carlill persisted. The company resisted. Louisa recovered and sued. In June, Mr. Justice Hawkins found in Mrs. Carlill's favour. The company's main defence was that adverts were mere "puffery" and only an idiot would believe such extravagant claims. Judge Hawkins pointed out that adverts were not aimed at the wise and thoughtful, but at the credulous and weak. A vendor who made a promise "must not be surprised if occasionally he is held to his promise".

Carbolic appealed. In December, three lord justices considered the case. Carbolic's lawyers tried several lines of defence. But in the end the case came down to a single matter: not whether the remedy was useless, or whether Carbolic had committed fraud, but whether its advert constituted a contract — which the company had broken. A contract required agreement between two parties, argued Carbolic's lawyers. What agreement had Mrs. Carlill made with them?

There were times, the judges decided, when a contract could be one-sided. The advert had made a very specific offer to purchasers: protection from flu or £100. By using the smoke ball as instructed, Mrs. Carlill had accepted that offer. The company might just have wriggled out of it if it hadn't added the bit about the £1000 deposit. That, said the judges, gave buyers reason to believe Carbolic meant what it said. "It seems to me that if a person chooses to make extravagant promises of this kind, he probably does so because it pays him to make them, and, if he has made them, the extravagance of the promises is no reason in law why he should not be bound by them," pronounced Lord Justice Bowen.

Louisa got her £100. The case established the principle of the unilateral contract and is frequently cited today.

Questions 14-17

Do the following statements agree with the information given in Reading Passage 2?

In boxes 14-17 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

14 Cities rather than rural areas were badly affected by the pandemic flu.

15 At the time of the flu pandemic, people didn't know the link between micro-organisms and illnesses.

16 People used to believe flu was caused by miasmas.

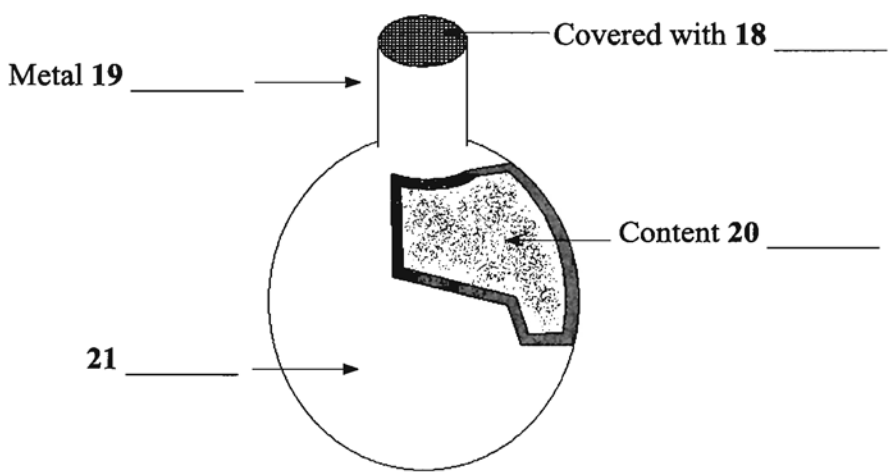
17 Flu prescriptions often contained harmful ingredients.

Questions 18-21

Complete the diagram below.

*Choose **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 18-21 on your answer sheet.



Questions 22-25

Look at the following people and list of statements below.

Match each person with the correct statement.

*Write the correct letter **A-F** in boxes 22-25 on your answer sheet.*

22 Mrs. Carlill

23 Mrs. Carlill's husband

24 Judge Hawkins

25 Lord Justice Bowen

List of Statements

A Filed a complaint which was never responded to

B Broke the contract made with Carbolic Smoke Ball company

C Initiated a legal case

D Described the audience of advertisement

E Claimed that most advertisements are fraudulent

F Treated advertisement as a type of contract

Question 26

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answer in box 26 on your answer sheet.

Why is Mrs. Carlill's case often cited in present day court trials?

A It proved the untrustworthiness of advertisements.

B It established the validity of one-sided contract.

C It explained the nature of contract.

D It defended the rights of consumers.

READING PASSAGE 3

*You should spend about 20 minutes on **Questions 27-40** which are based on Reading Passage 3 on the following page.*

Questions 27-34

Reading Passage 3 has eight sections **A-H**.

Choose the correct heading for each section from the list of headings below.

*Write the correct number **i-x** in boxes 27-34 on your answer sheet.*

List of Headings

i	Summarizing personality types
ii	Combined styles for workplace
iii	Physical explanation
iv	A lively person who encourages
v	Demanding and unsympathetic personality
vi	Lazy and careless personality
vii	The benefits of understanding communication styles
viii	Cautious and caring
ix	Factual and analytical personality
x	Self-assessment determines one's temperament

27 Section **A**

28 Section **B**

29 Section **C**

30 Section **D**

31 Section **E**

32 Section **F**

33 Section **G**

34 Section **H**

Communicating Styles and Conflict

Knowing your communication style and having a mix of styles on your team can provide a positive force for resolving conflict.

Section A

As far back as Hippocrates' time (460-370 B.C.) people have tried to understand other people by characterizing them according to personality type or temperament. Hippocrates believed there were four different body fluids that influenced four basic types of temperament. His work was further developed 500 years later by Galen (130-200 A.D.). These days there are any number of self-assessment tools that relate to the basic descriptions developed by Galen, although we no longer believe the source to be the types of body fluid that dominate our systems.

Section B

The value in self-assessments that help determine personality style, learning styles, communication styles, conflict-handling styles, or other aspects of individuals is that they help depersonalize conflict in interpersonal relationships.

The depersonalization occurs when you realize that others aren't trying to be difficult, but they need different or more information than you do. They're not intending to be rude; they are so focused on the task they forget about greeting people. They would like to work faster but not at the risk of damaging the relationships needed to get the job done. They understand there is a job to do, but it can only be done right with the appropriate information, which takes time to collect.

When used appropriately, understanding communication styles can help resolve conflict on teams. Very rarely are conflicts true personality issues. Usually they are issues of style, information needs, or focus.

Section C

Hippocrates and later Galen determined there were four basic temperaments: sanguine, phlegmatic, melancholic and choleric. These descriptions were developed centuries ago and are still somewhat apt, although you could update the wording. In today's world, they translate into the four

fairly common communication styles described below:

Section D

The sanguine person would be the expressive or spirited style of communication. These people speak in pictures. They invest a lot of emotion and energy in their communication and often speak quickly, putting their whole body into it. They are easily sidetracked onto a story that may or may not illustrate the point they are trying to make. Because of their enthusiasm they are great team motivators. They are concerned about people and relationships. Their high levels of energy can come on strong at times and their focus is usually on the bigger picture, which means they sometimes miss the details or the proper order of things. These people find conflict or differences of opinion invigorating and love to engage in a spirited discussion. They love change and are constantly looking for new and exciting adventures.

Section E

The phlegmatic person — cool and persevering — translates into the technical or systematic communication style. This style of communication is focused on facts and technical details. Phlegmatic people have an orderly, methodical way of approaching tasks, and their focus is very much on the task, not on the people, emotions, or concerns that the task may evoke. The focus is also more on the details necessary to accomplish a task. Sometimes the details overwhelm the big picture and focus needs to be brought back to the context of the task. People with this style think the facts should speak for themselves, and they are not as comfortable with conflict. They need time to adapt to change and need to understand both the logic of it and the steps involved.

Section F

The melancholic person who is softhearted and oriented toward doing things for others translates into the considerate or sympathetic communication style. A person with this communication style is focused on people and relationships. They are good listeners and do things for other people — sometimes to the detriment of getting things done for themselves. They want to solicit everyone's opinion and make sure everyone is comfortable with whatever is required to get the job done. At times this focus on others can distract from the task at hand. Because they are so concerned with the needs of others and smoothing over issues, they do not like conflict. They believe that change threatens the status quo and tends to make people feel uneasy, so people with this communication style, like phlegmatic people,

need time to consider the changes in order to adapt to them.

Section G
The choleric temperament translates into the bold or direct style of communication. People with this style are brief in their communication — the fewer words the better. They are big picture thinkers and love to be involved in many things at once. They are focused on tasks and outcomes and often forget that the people involved in carrying out the tasks have needs. They don't do detail work easily and as a result can often underestimate how much time it takes to achieve the task. Because they are so direct, they often seem forceful and can be very intimidating to others. They usually would welcome someone challenging them, but most other styles are afraid to do so. They also thrive on change, the more the better.

Section H
A well-functioning team should have all of these communication styles for true effectiveness. All teams need to focus on the task, and they need to take care of relationships in order to achieve those tasks. They need the big picture perspective or the context of their work, and they need the details to be identified and taken care of for success.

We all have aspects of each style within us. Some of us can easily move from one style to another and adapt our style to the needs of the situation at hand — whether the focus is on tasks or relationships. For others, a dominant style is very evident, and it is more challenging to see the situation from the perspective of another style.

The work environment can influence communication styles either by the type of work that is required or by the predominance of one style reflected in that environment. Some people use one style at work and another at home.

The good news about communication styles is that we all have the ability to develop flexibility in our styles. The greater the flexibility we have, the more skilled we usually are at handling possible and actual conflicts. Usually it has to be relevant to us to do so, either because we think it is important or because there are incentives in our environment to encourage it. The key is that we have to want to become flexible with our communication style. As Henry Ford said, "Whether you think you can or you can't, you're right!"

Questions 35-39

Do the following statements agree with the information given in Reading Passage 3?

In boxes 35-39 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

35 It is believed that sanguine people dislike variety.

36 Melancholic and phlegmatic people have similar characteristics.

37 Managers often select their best employees according to personality types.

38 It is possible to change one's personality type.

39 Workplace environment can affect which communication style is most effective.

Questions 40

*Choose the correct letter **A**, **B**, **C** or **D**.*

Write your answers in box 40 on your answer sheet.

The writer believes using self-assessment tools can

A help to develop one's personality.

B help to understand colleagues' behavior.

C improve one's relationship with the employer.

D directly resolve conflicts.

Test 7

READING PASSAGE 1

*You should spend about 20 minutes on **Questions 1-13** which are based on Reading Passage 1 on the following page.*

Questions 1-6

Reading passage 1 has six sections **A-F**.

Choose the correct heading for each section from the list of headings below.

*Write the correct number **i-x** in boxes 1-6 on your answer sheet.*

List of Headings

i	Locations and features of different seaweeds
ii	Various products of seaweeds
iii	Use of seaweeds in Japan
iv	Seaweed species around the globe
v	Nutritious value of seaweeds
vi	Why it doesn't dry or sink
vii	Where to find red seaweed
viii	Under-use of native species
ix	Mystery solved
x	How seaweeds reproduce and grow

1 Section **A**

2 Section **B**

3 Section **C**

4 Section **D**

5 Section **E**

6 Section **F**

New Zealand Seaweed

Call us not weeds; we are flowers of the sea.

Section A

Seaweed is a particularly nutritious food, which absorbs and concentrates traces of a wide variety of minerals necessary to the body's health. Many elements may occur in seaweed—aluminium, barium, calcium, chlorine, copper, iodine and iron, to name but a few—traces normally produced by erosion and carried to the seaweed beds by river and sea currents. Seaweeds are also rich in vitamins: indeed, Eskimos obtain a high proportion of their bodily requirements of vitamin C from the seaweeds they eat.

The nutritive value of seaweed has long been recognized. For instance, there is a remarkably low incidence of goiter amongst the Japanese, and for that matter, amongst our own Maori people, who have always eaten seaweeds, and this may well be attributed to the high iodine content of this food. Research into old Maori eating customs shows that jellies were made using seaweeds, fresh fruit and nuts, fuchsia and tutu berries, cape gooseberries, and many other fruits which either grew here naturally or were sown from seeds brought by settlers and explorers.

Section B

New Zealand lays claim to approximately 700 species of seaweed, some of which have no representation outside this country. Of several species grown worldwide, New Zealand also has a particularly large share. For example, it is estimated that New Zealand has some 30 species of *Gigartina*, a close relative of carrageen or Irish moss. These are often referred to as the New Zealand carrageens. The gel-forming substance called agar which can be extracted from this species gives them great commercial application in seameal, from which seameal custard is made, and in cough mixtures, confectionery, cosmetics, the canning, paint and leather industries, the manufacture of duplicating pads, and in toothpastes. In fact, during World War II, New Zealand *Gigartina* were sent to Australia to be used in toothpaste.

Section C

Yet although New Zealand has so much of the commercially profitable red seaweeds, several of which are a source of agar (*Pterocladia, Gelidium, Chondrus, Gigartina*), before 1940 relatively little use was made of them. New Zealand used to import the Northern Hemisphere Irish moss (*Chondrus crispus*) from England and ready-made agar from Japan. Although distribution of the *Gigartina* is confined to certain areas according to species, it is only on the east coast of the North Island that its occurrence is rare. And even then, the east coast, and the area around Hokiangna, have a considerable supply of the

two species of *Pterocladia* from which agar is also available. Happily, New Zealand-made agar is now obtainable in health food shops.

Section D

Seaweeds are divided into three classes determined by colour—red, brown and green—and each tends to live in a specific location. However, except for the unmistakable sea lettuce (*Ulva*), few are totally one colour; and especially when dry, some species can change colour quite significantly—a brown one may turn quite black, or a red one appear black, brown, pink or purple.

Identification is nevertheless facilitated by the fact that the factors which determine where a seaweed will grow are quite precise, and they tend therefore to occur in very well-defined zones. Although there are exceptions, the green seaweeds are mainly shallow-water algae; the browns belong to medium depths, and the reds are plants of the deeper water. Flat rock surfaces near mid-level tides are the most usual habitat of sea-bombs, Venus' necklace and most brown seaweeds. This is also the location of the purple laver or Maori karengo, which looks rather like a reddish-purple lettuce. Deep-water rocks on open coasts, exposed only at very low tide, are usually the site of bull kelp, strapweeds and similar tough specimens. Those species able to resist long periods of exposure to sun and air are usually found on the upper shore, while those less able to stand such exposure occur nearer to or below the low-water mark. Radiation from the sun, the temperature level, and the length of time immersed all play a part in the zoning of seaweeds.

Section E

Propagation of seaweeds occurs by spores, or by fertilization of egg cells. None have roots in the usual sense; few have leaves, and none have flowers, fruits or seeds. The plants absorb their nourishment through their fronds when they are surrounded by water: the base or "holdfast" of seaweeds is purely an attaching organ, not an absorbing one.

Section F

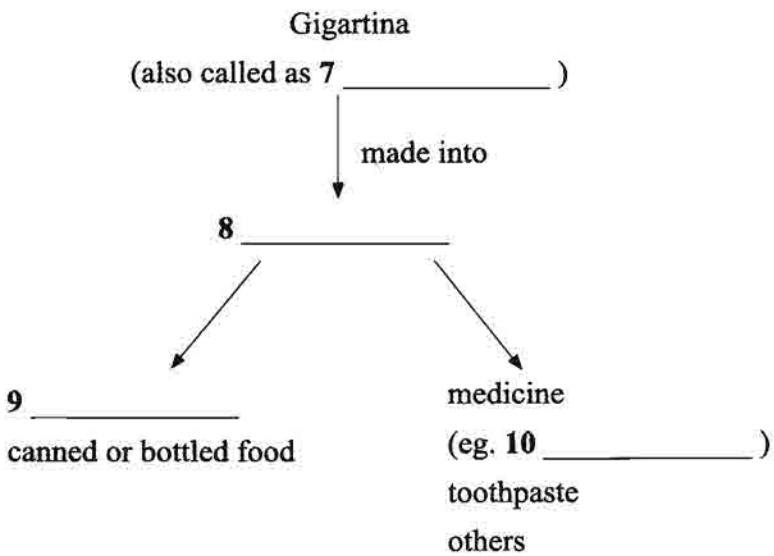
Some of the large seaweeds maintain buoyancy with air-filled floats; others, such as bull kep, have large cells filled with air. Some, which spend a good part of their time exposed to the air, often reduce dehydration either by having swollen stems that contain water, or they may (like Venus' necklace) have swollen nodules, or they may have distinctive shape like a sea-bomb. Others, like the sea cactus, are filled with slimy fluid or have coating of mucilage on the surface. In some of the larger kelps, this coating is not only to keep the plant moist but also to protect it from the violent action of waves.

Questions 7-10

Complete the flow chart below.

*Choose **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 7-10 on your answer sheet.



Questions 11-13

Classify the following description as relating to

A *Green seaweeds*
B *Brown seaweeds*
C *Red seaweeds*

*Write the correct letter **A**, **B**, or **C** in boxes 11-13 on your answer sheet.*

11 Can resist exposure in sunlight at high-water mark
12 Grow in far open sea water
13 Shares its habitat with karengon

READING PASSAGE 2

You should spend about 20 minutes on ***Questions 14-26*** *which are based on Reading Passage 2 below.*

Optimism and Health

Mindset is all. How you start the year will set the template for the rest, and two scientifically backed character traits hold the key: optimism and resilience (if the prospect leaves you feeling pessimistically spineless, the good news is that you can significantly boost both of these qualities).

Faced with 12 months of plummeting economics and rising human distress, staunchly maintaining a rosy view might seem deludedly Pollyannaish. But here we encounter the optimism paradox. As Brice Pitt, an emeritus professor of the psychiatry of old age at Imperial College, London, told me: "Optimists are unrealistic. Depressive people see things as they really are, but that is a disadvantage from an evolutionary point of view. Optimism is a piece of evolutionary equipment that carried us through millennia of setbacks."

Optimists have plenty to be happy about. In other words, if you can convince yourself that things will get better, the odds of it happening will improve — because you keep on playing the game. In this light, optimism "is a habitual way of explaining your setbacks to yourself", reports Martin Seligman, the psychology professor and author of *Learned Optimism*. The research shows that when times get tough, optimists do better than pessimists — they succeed better at work, respond better to stress, suffer fewer depressive episodes and achieve more personal goals.

Studies also show that belief can help with the financial pinch. Chad Wallens, a social forecaster at the Henley Centre who surveyed middle-class Britons' beliefs about income, has found that "the people who feel wealthiest, and those who feel poorest, actually have almost the same amount of money at their disposal. Their attitudes and behaviour patterns, however, are different from one another."

Optimists have something else to be cheerful about — in general, they are more robust. For example, a study of 660 volunteers by the Yale University psychologist Dr Becca Levy, found that thinking positively adds an average of 7 years to your life. Other American research claims to have identified a physical mechanism behind this. A Harvard Medical School study of 670 men found that the optimists have significantly better lung function. The lead author, Dr Rosalind Wright, believes that attitude somehow strengthens the immune system. "Preliminary studies on heart patients suggest that, by changing a person's *outlook*, you can improve their mortality risk," she says.

Few studies have tried to ascertain the proportion of optimists in the world. But a 1995 nationwide survey conducted for the American magazine *Adweek* found that about half the population counted themselves as optimists, with women slightly more apt than men (53 per cent versus 48 per cent) to see the sunny side.

Of course, there is no guarantee that optimism will insulate you from the crunch's worst effects, but the best strategy is still to keep smiling and thank your lucky stars. Because (as every good sports coach knows) adversity is character-forming - so long as you practise the skills of resilience. Research among tycoons and business leaders shows that the path to success is often littered with failure: a record of sackings, bankruptcies and blistering castigations. But instead of curling into a foetal ball beneath the coffee table, they resiliently pick themselves up, learn from their pratfalls and march boldly towards the next opportunity.

The American Psychological Association defines resilience as the ability to adapt in the face of adversity, trauma or tragedy. A resilient person may go through difficulty and uncertainty, but he or she will doggedly bounce back.

Optimism is one of the central traits required in building resilience, say Yale University investigators in the *Annual Review of Clinical Psychology*. They add that resilient people learn to hold on to their sense of humour and this can help them to keep a flexible attitude when big changes of plan are warranted. The ability to accept your lot with equanimity also plays an important role, the study adds.

One of the best ways to acquire resilience is through experiencing a difficult childhood, the sociologist Steven Stack reports in the *Journal of Social Psychology*. For example, short men are less likely to commit suicide than tall guys, he says, because shorties develop psychological defence skills to handle the bullies and mickey-taking that their lack of stature attracts. By contrast, those who enjoyed adversity-free youths can get derailed by setbacks later on because they've never been inoculated against aggro.

If you are handicapped by having had a happy childhood, then practising proactive optimism can help you to become more resilient. Studies of resilient people show that they take more risks; they court failure and learn not to fear it.

And despite being thick-skinned, resilient types are also more open than average to other people. Bouncing through knockbacks is all part of the process. It's about optimistic risk-taking — being confident that people will like you. Simply smiling and being warm to people can help. It's an altruistic path to self-interest — and if it achieves nothing else, it will reinforce an age-old adage: hard times can bring out the best in you.

Questions 14-17

*Complete the summary below using **NO MORE THAN THREE WORDS** from Reading Passage 2.*

Write your answers in boxes 14-17 on your answer sheet.

A study group from Yale University had discovered that optimism can stretch one's life length by **14** _____ years. And another group from Harvard thinks they have found the biological basis—optimists have better **15** _____ because an optimist outlook boosts one's **16** _____. The study on **17** _____ was cited as evidence in support of this claim.

Questions 18-22

*Complete each sentence with the correct ending, **A-I**, below.*

*Write the correct letter, **A-I**, in boxes 18-22 on your answer sheet.*

18 Brice Pitt believes

19 The research at Henley Center discovers

20 The study conducted by *Adweek* finds

21 The *Annual Review of Clinical Psychology* reports

22 Steven Stack says in his report

A	material wealth doesn't necessarily create happiness.
B	optimists tend to be unrealistic about human evolution.
C	optimism is advantageous for human evolution.
D	adversity is the breeding ground of resilience.
E	feelings of optimism vary according to gender.
F	good humor means good flexibility.
H	evenness of mind under stress is important to building resilience.
I	having an optimistic outlook is a habit.

Questions 23-26

Do the following statements agree with the claims of the writer in Reading Passage 2?

In boxes 23-26 on your answer sheet write

YES	*if the statement agrees with claims of the writer*
NO	*if the statement contradicts the claims of the writer*
NOT GIVEN	*if it is impossible to say what the writer thinks about this*

23 The benefits of optimism on health have been long-known.

24 Optimists have better relationships with people than pessimists.

25 People with happy childhoods won't be able to practise optimism.

26 Resilient people are often open, and even thick-skinned.

READING PASSAGE 3

You should spend about 20 minutes on ***Questions 27-40*** *which are based on Reading Passage 3 below.*

The Columbian Exchange

A Millions of years ago, continental drift carried the Old World and New Worlds apart, splitting North and South America from Eurasia and Africa. That separation lasted so long that it fostered divergent evolution; for instance, the development of rattlesnakes on one side of the Atlantic and vipers on the other. After 1492, human voyagers in part reversed this tendency. Their artificial re-establishment of connections through the commingling of Old and New World plants, animals, and bacteria, commonly known as the Columbian Exchange, is one of the more spectacular and significant ecological events of the past millennium.

B When Europeans first touched the shores of the Americas, Old World crops such as wheat, barley, rice, and turnips had not traveled west across the Atlantic, and New World crops such as maize, white potatoes, sweet potatoes, and manioc had not traveled east to Europe. In the Americas, there were no horses, cattle, sheep, or goats, all animals of Old World origin. Except for the llama, alpaca, dog, a few fowl, and guinea pig, the New World had no equivalents to the domesticated animals associated with the Old World, nor did it have the pathogens associated with the Old World's dense populations of humans and such associated creatures as chickens, cattle, black rats, and *Aedes egypti mosquitoes*. Among these germs were those that carried smallpox, measles, chickenpox, influenza, malaria, and yellow fever.

C As might be expected, the Europeans who settled on the east coast of the United States cultivated crops like wheat and apples, which they had brought with them. European weeds, which the colonists did not cultivate, and, in fact, preferred to uproot, also fared well in the New World. John Josselyn, an Englishman and amateur naturalist who visited New England

twice in the seventeenth century, left us a list, "Of Such Plants as Have Sprung Up since the English Planted and Kept Cattle in New England," which included couch grass, dandelion, shepherd's purse, groundsel, sow thistle, and chickweeds. One of these, a plantain (Plantago major), was named "Englishman's Foot" by the Amerindians of New England and Virginia who believed that it would grow only where the English "have trodden, and was never known before the English came into this country." Thus, as they intentionally sowed Old World crop seeds, the European settlers were unintentionally contaminating American fields with weed seed. More importantly, they were stripping and burning forests, exposing the native minor flora to direct sunlight, and the hooves and teeth of Old World livestock. The native flora could not tolerate the stress. The imported weeds could, because they had lived with large numbers of grazing animals for thousands of years.

D Cattle and horses were brought ashore in the early 1600s and found hospitable climate and terrain in North America. Horses arrived in Virginia as early as 1620 and in Massachusetts in 1629. Many wandered free with little more evidence of their connection to humanity than collars with a hook at the bottom to catch on fences as they tried to leap over them to get at crops. Fences were not for keeping livestock in, but for keeping livestock out.

E Native American resistance to the Europeans was ineffective. Indigenous peoples suffered from white brutality, alcoholism, the killing and driving off of game, and the expropriation of farmland, but all these together are insufficient to explain the degree of their defeat. The crucial factor was not people, plants, or animals, but germs. Smallpox was the worst and the most spectacular of the infectious diseases mowing down the Native Americans. The first recorded pandemic of that disease in British North America detonated among the Algonquin of Massachusetts in the early 1630s: William Bradford of Plymouth Plantation wrote that the victims "fell down so generally of this disease as they were in the end not able to help one another, no, not to make a fire nor fetch a little water to drink, nor any to bury the dead." The missionaries and the traders who ventured into the American interior told the same appalling story about smallpox and the indigenes. In 1738 alone the epidemic destroyed half the Cherokee; in 1759 nearly half the Catawbas; in the first years of the next century two-thirds of the

Omahas and perhaps half the entire population between the Missouri River and New Mexico; in 1837-38 nearly every last one of the Mandans and perhaps half the people of the high plains.

F The export of America's native animals has not revolutionized Old World agriculture or ecosystems as the introduction of European animals to the New World did. America's grey squirrels and muskrats and a few others have established themselves east of the Atlantic and west of the Pacific, but that has not made much of a difference. Some of America's domesticated animals are raised in the Old World, but turkeys have not displaced chickens and geese, and guinea pigs have proved useful in laboratories, but have not usurped rabbits in the butcher shops.

G The New World's great contribution to the Old is in crop plants. Maize, white potatoes, sweet potatoes, various squashes, chiles, and manioc have become essentials in the diets of hundreds of millions of Europeans, Africans, and Asians. Their influence on Old World peoples, like that of wheat and rice on New World peoples, goes far to explain the global population explosion of the past three centuries. The Columbian Exchange has been an indispensable factor in that demographic explosion.

H All this had nothing to do with superiority or inferiority of biosystems in any absolute sense. It has to do with environmental contrasts. Amerindians were accustomed to living in one particular kind of environment, Europeans and Africans in another. When the Old World peoples came to America, they brought with them all their plants, animals, and germs, creating a kind of environment to which they were already adapted, and so they increased in number. Amerindians had not adapted to European germs, and so initially their numbers plunged. That decline has reversed in our time as Amerindian populations have adapted to the Old World's environmental influence, but the demographic triumph of the invaders, which was the most spectacular feature of the Old World's invasion of the New, still stands.

Questions 27-34

Reading Passage 3 has eight paragraphs **A-H**.

Which paragraph contains the following information?

*Write the correct letter **A-H** in boxes 27-34 on your answer sheet.*

27 A description of an imported species that is named after the English colonists.

28 The reason why both the New World and Old World experienced population growth

29 The formation of new continents explained

30 The reason why the indigenous population declined

31 An overall description of the species lacked in the Old World and New World

32 A description of some animal species being ineffective in affecting the Old World

33 An overall explanation of the success of the Old World species invasion

34 An account of European animals taking roots in the New World

Questions 35-38

Do the following statements agree with the information given in Reading Passage 3?

In boxes 35-38 on your answer sheet write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

35 European settlers built fences to keep their cattle and horses inside.

36 The indigenous people had been brutally killed by the European colonists.

37 America's domesticated animals, such as turkey, became popular in the Old World.

38 Crop exchange between the two worlds played a major role in world population growth.

Questions 39-40

*Answer the questions below using **NO MORE THAN THREE WORDS** from the passage for each answer.*

Write your answers in boxes 39-40 on your answer sheet.

39 Who reported the same story of European diseases among the indigenes from the American interior?

40 What is the still existing feature of the Old World's invasion of the New?

参考译文

Test 1

READING PASSAGE 1

威廉·吉尔伯特与磁场学

A 16、17 世纪见证了两位伟大的现代科学先驱的诞生：伽利略与威廉·吉尔伯特。他们在科学上的发现影响深远。吉尔伯特是第一位真正意义上的现代科学家，作为现代电磁学之父，他是一位极有学识的英国人，同时也是伊莉莎白宫廷的一名内科医生。在他之前，人们对电磁学的认知还停留在古代，只知道天然磁石拥有磁性，以及琥珀和黑玉在被摩擦时能够吸附纸片等细小重量的物体。尽管如此，与他的贡献相比，吉尔伯特并不那么为人所知。

B 吉尔伯特出生早于伽利略。1544 年 3 月 24 日，他出生在英国科尔切斯特当地一个显赫的家庭中，他读完大学预科学校之后在剑桥圣约翰学院学习医学，并于 1573 年毕业。此后，吉尔伯特环游了欧洲大陆并最终定居伦敦。

C 他是一名非常成功并且杰出的医生。在他当选为英国皇家科学学会主席之时，他的事业达到最高峰。同时吉尔伯特还被任命为女王（伊丽莎白一世）的私人医生，之后被女王加封爵士。他忠诚地为女王服务，直到她辞世。但是吉尔伯特并没有比女王多活太久。1603 年 12 月 10 日，在被任命为詹姆士国王的私人医生几个月之后，他便去世了。

D 起初吉尔伯特感兴趣的是化学，但很快他的注意力就转移到了炼金术所带来的大量神秘现象上（比如金属的融化变形）。在研究了古代理论后，他逐渐对物理学产生了兴趣，特别是古希腊人关于天然磁石的知识，这种奇特的矿物拥有吸附铁器的力量。当时，英国在 1588 年打败了西班牙无敌舰队从而成为一个主要的航海国家，为英国在美洲建立殖民地开辟了道路。此时英国舰船依靠罗盘在大海中航行，然而并没有人了解它的工作原理。究竟是像哥伦布曾经猜测的那样：北极星吸引了罗盘指针？还是像《奥德赛》中描述的那样：在极地有座磁山，船只不得接近，因为水手们相信，巨大的磁力会把船上的铁钉、铁制配件拔出？ 20 年过去了，吉尔伯特进行了大量的创新性实验来理解磁学。他的著作包括《磁石论》、《地磁学》等。

E 吉尔伯特的发现对现代物理学非常重要。他研究了电与磁的内在特性，他甚至创造了“发电的”这个单词。早期有关磁性的观点充斥着大量迷信色彩，比如认为在磁石上研磨大蒜能够抵消磁石的磁性，其中一个例子就是船员们甚至相信大蒜的味道就能干扰到罗盘，这也是为什么舵手禁止在船上罗盘附近吃大蒜的原因。吉尔伯特还发现通过使用毛皮、塑料等类似材料摩擦金属，能够使金属磁化。他将磁体两端命名为“北极”和“南极”。这些磁极根据磁性不同而相互吸引或者排斥。此外，一般的铁器都会被磁体所吸附。尽管他已经开始研究电与磁之间的关系，但遗憾的是他没能完成此项工作。他关于使用琥珀和黑玉产生静电的研究只证实了带电的物体可以像磁体一样吸附小纸片之类的东西。之后法国人 du Fay 发现了这其中存在两种电荷，正电荷和负电荷。

F 吉尔伯特还对传统天文学提出了质疑。尽管他是名哥白尼主义者，但他的理论精髓并不在于地球是宇宙的中心还是绕太阳运行，而在于他认为天体和地球并不是等距离的，它们拥有像地球一样的行星围绕它们运行。地球本身就像一个巨大的磁体，这也是为什么罗盘总是指向北方的原因。地球沿着由自身磁极矫正的轴心进行旋转。吉尔伯特甚至把磁体的磁极比作地球的磁极，并基于这种类比建立了一套完整的磁学理论。在他的解释中，磁性是地球的精髓。因此一个完美的球型天然磁石在和地球磁极相对应后，将会 24 小时自转一周。此外，他还认为太阳和其他天体像地球一样围绕着一个透明内核进行自转，并推测月亮可能也是一个磁体，从而导致它被地球吸引而围绕地球运行。这或许是人类首次认识到天体运行轨迹可能是由外力导致的。

G 他用实验进行研究的方法是革命性的。与古希腊哲学家那样在脑海中进行纯理论的思考不同，这是一种全新的科学研究态度。在当时，科学实验还不那么流行。正是由于这种科学态度，以及他对磁学理论的贡献，人们以“吉伯”作为磁电动力也就是磁动势的单位。和其他人依靠权威理论或演绎逻辑的方式不同，他的细心观察和严谨实验的方法为现代科学奠定了坚实的基础。

READING PASSAGE 2

科学家们现在意识到，就在那个夏天，人们才真真切切地感受到全球变暖。2003 年的夏天是如此不同寻常：英国经历了有记录以来的最高气温，欧洲大陆森林大火肆虐，大河干枯，热浪造成了数以千计的死亡。但是这个夏天究竟有多么重大的意义，直到现在才渐渐明了。

六月、七月和八月是西欧以及中欧有史以来最热的几个月。葡萄牙、德国、瑞士和英国都记录了本国的最高温度，要比之前最热记录高得多。据世界顶级气温监测分析机构——位于诺里奇的东英格兰大学气候研究小组（CRU）报道称，从巴黎西部到意大利北部，以及瑞士和德国南部，这一矩形区域内的夏季平均气温比长期标准温度高出 3.78℃。

超出的温度似乎并不算多，但是当你了解到以往的情况后就会意识到这是多么大的变化。这在过去任何地方的数据中都是前所未有的。这种罕见的情况使得 CRU 的主管菲尔·琼斯教授准备发表公开声明，2003 年这种极端现象的出现不是自然界的气候变化，而是由于人类活动导致的全球变暖，以前只有少数几个科学家发布过类似声明。

到目前为止，这种近期的高温和气象学家们预测的气候变化保持了一致。在北纬 35–50 度、东经 0–20 度之间的广大区域，CRU 拥有 1781 年以来该区域的温度记录。以 1961–1990 年间有记录的平均夏季温度为标准，可以很容易地将整个地区偏离正常温度的情况或者说“出现异常”的情况联系起来。下图所示是过去 200 年间的气候变化，其中至少有 6 次异常，图中的峰值代表了炎热的年份，其高出的温度接近甚至超过了 2℃。但是这些和 2003 年相比还差很远，这一年的异常将近超出 4℃。

“这非常明显，”琼斯教授对《独立报》记者说，“从数据来看这非常不正常。这些数字不是按正常状态分布的。回归期（再次发生高温的时间间隔）理应是数千年一次。让我们来看这超出平均温度的 4 度，其中将近 3 度可能来自自然界的变化，因为这些在过去的夏季中曾出现过。但是最后一度的升高则是由人类活动导致的全球变暖造成的。”

从某种意义上说，气候学家们很早就预测会出现 2003 年这般炎热的夏天了。到目前为止，地球变暖主要表现为冬天升温，而不是夏天更热。上周，联合国预测冬季升温过于迅速，以至于欧洲低海拔滑雪胜地的冬季运动项目将会消亡。而就像这年的夏天一样，史无前例的炎夏迟早将会袭来。

这个夏季最突出的特点是夜晚炎热，尤其是八月上半月。在巴黎，8 月 7 日—14 日之间气温从未低于 23℃（73.4°F），8 月 11 日—12 日市区记录温度最高的那个晚上，温度则从未降到 25.5℃（77.9°F）以下。德国记录的出现最高温的夜晚发生在莱茵河谷的

Weinbiet，这里最低气温记录是 8 月 13 日的 27.6℃，瑞士和意大利也出现了类似的夜间高温。

整个八月，法国和往年相比增加了 15,000 例与夜间高温有关的死亡报告。该数字在当月的最初 12 天里逐渐增加，8 月 12 日—13 日夜间达到一天死亡 2,000 例的最高峰，8 月 14 日后最低气温下降了 5℃，死亡人数也随之明显减少。高温对老年人的影响最为严重，增加的死亡人数中有 70% 年龄在 75–94 之间。

在英国，这一年整体上本应该是历史最高温度，但是尽管 8 月 13 日出现了史上最高温，这一年的夏天——六月、七月和八月——还没有 1976 年和 1995 年热，在这两年中出现了较长时期的酷暑。同时，这一年成为 1856 年有温度记录以来的第三高温年，排在前面的还有 1998 年和 2002 年。琼斯教授说，如果加上 10 月、11 月、12 月的所有记载，这一年将成为第二高温年，而最热的 10 年都发生在 1990 年之后。琼斯教授对 2003 年欧洲夏日的惊人现象一点都不感到怀疑。“该年的温度数据超出了以往所有记录的范围，”他说，“这是过去 500 年甚至更长时间以来最热的一个夏季。这实在是不可思议。”

他在东英格兰大学廷德尔气候变化研究中心的同事们正在准备一项专门的研究计划。“这是一个前所未有的夏季，无论是温度达到的极端值，还是这场高温波及的范围和力度。”中心的行政主管迈克·休谟教授如是说。

“这显然会促使很多国家在未来开始重视气候变化的问题并为之做出计划，正像 2000 年英国大洪水革命性地改变了政府对洪水的看法一样。”2003 年的高温将会给欧洲带来类似的影响。

READING PASSAGE 3

业余自然爱好者

根据阿拉斯加年度赌赛期间观察到的候鸟的情况，生态学家们通过大量民间数据来预测气候变化的影响。

A 蒂姆·斯帕克斯从信封里取出了一本皮面笔记本，笔记本的纸页已经微微泛黄，它记载了莱斯特市基尔沃斯镇已故的养蜂人沃特·科茨从 1941 到 1969 年间的养蜂记录。他把这本笔记本和他那堆越来越多的地方日报、鸟类观察列表、园丁日记放在

了一起。“我们每个月都会发现一个新的记录，”他说，“我对此感到吃惊。”在科茨时代的两个世纪之前，东英格兰诺福克郡的一名地主罗伯特·马沙姆就开始记录他的土地上生存的动植物的生长周期，比如白头翁第一次开花的时间、橡树抽芽的时间以及白嘴鸦开始筑巢的时间。马沙姆家族一代代的后人们搜集这些资料长达211年。

B 今天，这些记录已被投入使用，这是当年的作者们未曾料到的。这些以及其他类似数据对研究生物自然现象时间或者生态生物学的学家们来说是非常珍贵的。通过把这些记录和气候数据相结合，研究者们就能解释温度变化如何影响春天的到来时间这一类问题，从而使生态学家能够精确预测气候变化所产生的影响。一小部分研究者已经在做这样的整理工作，他们把几百年来由数千名业余自然爱好者记录下来的信息编纂在一起。与此同时，更多系统性的工作也已经展开，并创造了惊人的成果。“让人感兴趣的信息量简直是多得惊人！”剑桥郡 Monks Wood 生态与水文研究中心的气候研究学家斯帕克斯这样说到。

C 斯帕克斯描述说，他最初认识到这些所谓的“橱柜里的生态生物学家们”是由于当时一个退休的同事给了他马沙姆的记录。现在他把大量的时间用来追寻这些历史数据，从一个材料到另一个材料。这个消息不胫而走，其他人也不断给他提供一些类似材料的信息，越来越多的业余生态生物学家们也从他们的“橱柜”中走了出来。英国人热衷于记录和收集的爱好使得他的工作容易了很多——一个来自肯特郡的男子寄来了他30年的厨房日历，在上面他标注了邻居家木兰花的开花日期。

D 其他研究人员也从这类独特的资源中发掘出了有价值的数据。加利福尼亚州斯坦福大学的生态学家瑞夫·萨格瑞最近研究了一场赌赛的记录，这场赌赛是在正在融化的河面上搭建一种特殊的三脚架，参与者要猜出它倒在河面上的精确时间。在阿拉斯加帝纳河畔，这场比赛自1917年以来每年举办一届，通过研究这一比赛的结果可以发现，现在这条河流开始融化的日期比比赛诞生时早了5天。

E 总之，这些记录帮助研究者发现：和20年前相比，北半球大部分地区的很多自然现象比以前来得早了。无论是发芽期还是鸟类迁徙期以及蝴蝶羽化期都是如此。这些数据也暗示出未来自然界的变化趋势。业余爱好者们的记录与气候变化模型可以帮助指导环境保护。安阿伯市密歇根大学的生态学家泰瑞·如特收集了1955年到1996年间鸟类观察者在美国中西部季节性池塘中所作的野禽记录，并把它们和气象数据以及未来变暖模型整合起来。经她分析发现，未来干旱气候将会增加，这一预测结果意味着池塘附近生物的繁殖量将会减半。“美国北部的水禽数量很可能会随着全球变暖而显著下降。”她说。

F 但是并不是所有的专家都乐于使用民间数据。“很多科学家不愿使用它们，他们认

为这些数据有太多问题。”如特说。不同的观察者会对观察内容有不同的想法，比如雪花莲的开放。“特殊观察最重要的是如何细致并系统地进行，”密尔沃基市威斯康辛大学研究植物和气候关系的马克·斯沃特兹说，“我们需要准确地知道是观察者具体观察到了什么——如果他们只是说‘我记录了叶子掉落的时间’，这可能是没有用的。”测量秋天的到来可能就很困难，因为确定叶子何时变黄比确定它什么时候发芽要主观得多。

G 总之，大多数生态生物学家对业余爱好者们的贡献给予了积极评价。“他们具有纯朴的科学力量：细致地观察了自然世界。”萨格瑞说。但是专家们也清楚需要仔细考量记录的质量。比如，如特就准备和记录收集者进行面谈，来监测一份民间记录的可靠性。她说，“你总是会担心——诸如度假之类的琐碎事情都会影响数据的准确性，我之所以有很多记录不采用，就是因为它们不够准确。”其他人认为正确的统计数据可以消除民间记录的一些问题。环境学家阿诺德·范·威利特及其荷兰瓦格宁根大学的同事们正在开发新的统计方法，来计算民间生态生物数据的不确定性。鉴于过去记录中业余生态生物学家们表现出的热忱，专业研究人员们正在为未来数据记录创建标准化的记录方案。他们希望设计出好的研究方法并能在大部分观察数据中推广这些方法，从而消除个人记录者们记录方法上的差别。这些数据收集起来成本低廉，却能够提供空间、时间、物种范围等广泛的资料。“没有观察者们的帮助，在广大的地理范围内收集数据是非常困难的。”如特说。

H 生态生物学也能帮助公众理解气候变化方面的信息。斯帕克斯说道，“因为公众理解这些记录，他们就能接受它们。”他还补充说，这些记录可以显示一些潜在的令人不快的后果，比如越是炎热的年份，市政府会接到越多的鼠灾报告。让民众参与进来对公众关系是极为有益的。“人们乐于看到他们因为爱好而收集的数据具有科学使用价值——这会让他们更有动力。”如特如是说。

Test 2

READING PASSAGE 1

如何识破说谎者

不管我们有多么厌恶它，欺骗却在自然界所有生命中存在。鸟类通过佯装受伤来诱骗饥饿的捕食者远离巢中的幼仔。蜘蛛蟹通过海藻和碎片残骸把自己伪装成其他东西，来逃避它们的天敌。大自然充分地回馈了这些成功的伪装者，它们能够存活足够长的时间从而完成配对繁衍。所以当我们研究人类时也不必吃惊，根据南加利福尼亚大学的心理学家格瑞德·吉利森的研究，每个人每天大约说谎200次，差不多每5分钟就会有一次谎言。这些欺骗通常都是因为某些类似的原因：保护自我或者为了得到通过其他方式无法得到的东西。

但是作为一种生存技能，知道如何识破欺骗和知道如何说谎并且不被察觉同样重要。一个能够迅速识破谎言的人很难被不道德的生意伙伴诈骗，或被出轨的伴侣蒙蔽。幸运的是，自然界总能提供足够的线索，让我们在伪君子纠结的谎言中发现破绽——只要你知道怎么去观察。通过近距离观察面部表情、肢体语言和说话声调，任何人都可以识别出说谎者的谎言痕迹。研究人员甚至开发了类似于测谎仪的计算机程序，通过分析肉眼和人耳可辨别的物理信号来找出真相。旧金山加州大学的心理学教授保罗·艾克曼研究谎言的秘密与艺术已经15年了，他这样说到："通过正确的训练，很多人都能学会如何识破谎言。"

为了找出哪种谎言最有效，成功的说谎者们需要准确地分析其他人的情绪状态。艾克曼的研究显示，这种情商对于优秀的识破谎言者来说同样很重要。密切观察情绪状态时必须注意的就是说谎者的紧张，大部分说谎者都会感受到他们所说所做与实情存在矛盾冲突。

即使最高科技的谎言识别器都无法识破所有谎言，比如它们只是识破情绪上的生理变化，而这些和受测者所讲内容可能相符也可能大相径庭。举例来说，测谎仪一般测量呼吸、心跳速率、皮肤传导率。这些生理指标在人类紧张时就会上升，而通常人在说谎时就会

感到紧张。人紧张时通常会流汗，汗水中的盐分能够导电。这就是为什么皮肤导电率的突然升高往往意味着紧张——或许是因为怕被抓到而紧张吧？——至少这可能意味着这个人不是特别真实。另一方面，这也可能是因为电视演播室的灯光太热了——这正是法庭不采信测谎仪测试结果的原因所在。“好的谎言识别器不依赖于某种单一的信号，”艾克曼说，“但是言语或非言语的解释则暗示着这个人可能在说谎。”

所有的线索都写在脸上。因为脸部肌肉直接和大脑的情绪控制区相连接，所以面部表情是心灵的窗户。神经学的研究甚至证实说，真实的情绪与不真诚的情绪通过不同的方式经过大脑。比如说，当你要求一个一侧面瘫的病人假装笑一下时，他能活动的那半边嘴角会上扬。但是当你给这个病人讲一个好笑的笑话时，他会不由自主地做出一个完整的笑容。极少数的人——尤其大部分是演员、政客——能够下意识地控制他们的整个面部表情。谎言往往是说谎者的真实情绪从谎言的“面具”下流露出来时被揭穿的。“我们在感受情绪前往往不会思考，”艾克曼说，“在我们意识到体验某种情绪之前，我们的脸上就已经有表情了。”

最难作假或者隐瞒的面部表情之一（如果这种感情是真实的）就是悲伤。当一个人真正伤心时，他会由于悲痛而皱起眉头，同时眉毛内侧会向上拉起。在艾克曼测试的人员中，不到 15% 的人可以随意地动眉毛。相比之下，几乎所有人都可以有意识地做出沉下眉毛显示生气怒容的表情。艾克曼说，“如果有人说他很伤心，但他的眉毛内侧没有上拉，那么这个悲伤很可能是假的。”

与之相反，笑容则是最容易伪造的表情之一。只需要两块肌肉——从颊骨到嘴角的主要肌肉，颧肌——就可以让人露齿而笑。但是这仍可以识破。一个真诚的笑容不仅体现在嘴角，当人们开怀大笑时，眼部周围的轮市肌会产生独特的鱼尾纹。如果只有嘴角上扬，眼睛微皱但是眉毛内侧没有低垂，你就可以识破这个假笑了，眼部轮市肌的运动是很难造假的。眉毛没有低垂下去是假笑看起来牵强僵硬的原因之一。

READING PASSAGE 2

在右撇子世界里做左撇子

这个世界是为右撇子的人而设计的。为什么仍有十分之一的人选择惯用左手呢？

A 两个右撇子的人生出左撇子孩子的几率只有 9.5% 左右。如果父母中有一方是左撇

子，那么孩子是左撇子的几率会上升到 19.5%。如果父母双方都是左撇子，那么孩子是左撇子的几率则为 26%。但是，偏好使用左手或右手还可能是新生儿通过模仿父母而形成的习惯。为了测试基因的影响度，莱切斯特大学的英国生物学家马瑞安·安尼特在 20 世纪 70 年代提出假设，认为左右手的使用习惯不是由某一种基因决定的。确切地说是在婴儿的生长时期，一种特殊的分子要素促使大脑左半球得以加强，从而增加了右手占主导的可能性，这是因为大脑的左半球控制着身体的右半侧，反之亦然。对于缺少这种要素的大部分人而言，左右手使用习惯将会随机发展。

但是，在双胞胎身上开展的研究使这个理论复杂化了。受测的同卵双胞胎中有五分之一是一个左撇子和一个右撇子，尽管他们的基因物质都是相同的。因此，左右手使用习惯也不单纯是由基因来决定的。

B 基因理论同样被爱尔兰贝尔法斯特市皇后大学的彼特·海普尔及其团队所推翻。2004 年，这些心理学家在用超声波观测第 15 周的妊娠时发现，胎儿已经通过吮吸大拇指来体现他们的选择了。通常情况下，这种选择会在出生后继续发展。在 15 周的时候，大脑还不能够完全控制身体的四肢。海普尔推测胎儿倾向选择发育更快的那一侧身体，这些运动反过来又影响了大脑的发育。无论这种早期选择是暂时的还是在婴儿发育过程中得以保持，都是不得而知的。

基因预先决定论也被广泛的观察所推翻，观察发现孩子们直到两三岁大时才确定下来使用右手还是左手。

C 但是即使这些关联都是真的，也不能解释导致左撇子的真正原因。在动物之中，身体任何一侧的特殊偏好都是普遍存在的。猫把沙发下面的小玩具抓出来时，喜欢用某一只爪子而不是另一只，马则会更频繁地踏某只蹄子。某些种类的螃蟹在运动时则会以左钳或右钳为主导。从进化的角度看，把力度和灵活性集中在一只爪子上远比分散在两只、四只甚至八只爪子上更有效率。目前对大多数动物来说，对某侧肢体的偏好似乎是随机的。右手占主导的现象只在人类中存在。这一现象将人们的注意力引向了大脑的两个半球以及语言上。

D 对大脑半球的研究兴趣至少可以追溯到 1836 年。那一年，在一次医学会议上，法国内科医生马克·戴克斯报告了他的病人中一种不常见的共性。在他当乡村医生的许多年里，戴克斯遇到了 40 多名男性和女性患者，他们都由于脑部的某种损害而产生了语言障碍。非比寻常的是，每个人大脑的左半侧都受到了伤害。在这次会议上，戴克斯详尽阐述了他的理论，认为大脑左右半球各负责特定的功用，左半球则负责控制语言功能。可是这位法国人的观点并没有引起其他专家的注意。

然而一段时间之后，科学家们发现了越来越多的证据说明人们在左脑受伤后会产生语言障碍。大多数大脑右半球受损的患者缺乏感知能力或者无法集中注意力。大脑不对称性理论的主要进展来自 19 世纪 60 年代所谓的割裂脑手术的结果，这项手术是为了治疗癫痫患者。手术中，医生切断了胼胝体——连接两个脑半球的神经束。这种外科手术式的切断终止了两个脑半球间几乎所有的正常交流，这给研究单侧大脑活动提供了机会。

E 1949 年，神经外科医生约翰·韦德设计了首个能够进入大脑语言功能区的测试。通过给左侧或右侧颈动脉注射麻醉剂，韦德暂时麻痹了健康大脑的一侧，这使他能够更细致地研究另一侧大脑的性能。采用这种方法，蒙特利尔神经学研究所的布伦达·米尔纳和已故的希欧多·瑞斯姆森在 1975 年发表了一项研究报告，肯定了乡村医生戴克斯早在 140 年前所阐述的内容：96% 的右撇子中，左脑对语言的加工处理强度更大。但是在左撇子中，这种关系还没有那么明确。对 2/3 的人来说，左半球仍旧是最活跃的语言处理器。但是对剩下的 1/3 人来说，他们或是右侧的大脑占据主导，或是两侧大脑同样活跃，控制不同的语言功能。

最新数据使人们对由于语言系统由左半球控制从而导致右撇子占据主导这一理论产生了怀疑。语言控制总会不知为何地影响身体运动的控制，这一问题的原因目前仍不清楚。一些专家认为左半球控制语言的原因之一是由于加工处理语言的器官——喉咙和舌头——在人体中的位置是对称的。由于这些器官位于中间，因此从进化的角度上还不能确定大脑的哪一侧应该控制它们，左右脑同时控制也不大可能产生平滑的肌动活动。

同时，语言和左右手习惯很可能由于不同的原因优先得到发展。例如，包括新西兰奥克兰大学的进化心理学家迈克·C·科布里斯在内的一些研究人员认为，人类语言起源于手势。手势早于单词出现，并且帮助语言的形成。如果大脑的左半球开始主导语言，那么它也会主导手势，由于左半球控制了身体右侧，右手则会发展的越来越强壮。

F 或许我们还可以了解更多。目前，我们应该高兴，因为不同的左右手习惯很可能为不同的人带来了不同的天赋。普遍的智商理论是左脑发达的右撇子善于逻辑性的、分析性的思考。右脑发达的左撇子被认为更具有创造性，而极少数两脑并用的人或许会更加优秀。但是目前一些神经外科学家认为这些理论还只是一种猜测。

很少有科学家宣称说左撇子更具有创造潜能。但是在艺术家、作曲家和一些被人们所熟知的伟大的政治思想家中，左撇子是很普遍的。如果这些人是那种语言功能分布在两个脑半球的左撇子，那么这种强烈的相互影响的脑电波会导致不寻常的心智能力。

G 左撇子创造力强的原因或许很简单，因为他们必须在右撇子的世界里表现地更聪明。这场比拼早在孩童时代就开始了，这或许就为以后的优异表现打下了基础。

READING PASSAGE 3

苏联人的新工作制

历史学家们研究了斯大林是如何更改历法来使苏联人民持续工作的。

A “没有任何一个堡垒是布尔什维克人攻不破的”，斯大林用这样的话语表达了他对苏联政府五年规划的强大自信：弱小落后的俄国即将成为强大的现代化工业国家。1928 年到 1932 年之间，苏联的煤炭、铁、钢材的产量以惊人的速度上升，新工业城市处处涌现，世界上最大的水坝也建成了。每个人的生活都受到了影响，集体农业生产制使得数以百万计的人从农民变为无产阶级工人。私有企业在城市和乡村中消失了，只留下了斯大林专政控制的国有企业。在那个热情高涨的年代，共产党员们坚信，凭借钢铁般的意志和勤恳的工作必将建立一个新世界。

B 热情随着时间而蔓延，使得整个国家变成了一台巨大而高效的机器，在这里在这里人们不会浪费每一分钟，尤其在工作中。当时美国人弗雷德里克·温斯洛·泰勒（1856–1915）根据动作时间研究发明了流水线生产方式，这使得每一名工人都能发挥出最大的生产力，列宁被他的思想所影响。布尔什维克人同样尊崇亨利·福特的大批量配件生产线以及数以千计进口的福特森拖拉机。前来培训操作员的工程师们促进了这种拖拉机的推广，这最终变成了一种对福特的崇拜。赶超资本主义模式成为新苏联人训练的一部分，英雄主义式的无休止工作在这个动力十足的新社会中将使每个人获益。所有的这些在这份规划中达到顶点，这份规划被视为国家机器的伟大胜利，在这个国家机器中工人们则会像机器人般高效率工作。

C 然而这就是一直以提高无产阶级生活水平为目标的共产主义。这个规划里的重要一步是 1927 年突然发表的一份宣言，这份宣言中将每天的工作时间从 8 小时缩短为 7 小时。1929 年 1 月，所有的工厂都被要求在规划结束之前采用缩短的工作日。工人们将在周日和假期前的晚上多拥有一小时的私人时间。但是，政府索取的总是要比给予的多，因为这是建立三班倒体系增加产量计划的一部分。这意味着工厂将会日夜运转，同时人们不得不在不情愿的时间段里工作。

D 然而，在这项政策公布之前，列宁最亲密的伙伴、基础经济政策的设计者尤里·拉宁提出了一个更有效率的想法。在周日，工人们是休息的，车间也会关闭。为什么不把这些浪费掉的日子用来安排一个连续的工作周呢？这样工厂里的机器就可以在这一周里全天候满额运转。当拉宁在 1929 年 5 月向苏联人民代表大会提交这份预案时，没有人太注意它。但是很快，他得到了斯大林的信任，斯大林实施了这份预案。突然之间，6 月份的苏联报纸印满了称赞新方案的文章。8 月，在人们对五年规划热情高涨之时，苏联人民委员会决定立即执行不间断工作周政策，以确保五年计划的种种目标得以顺利实现。

E 这个想法似乎很简单，但在实际操作中却被证实相当困难。很明显，不可能要求工人们每周工作 7 天，他们的总工作时间也不该变长。然而解决方式是很巧妙的：新提出的五天工作周规定工人们每工作 4 天，第五天是休息日；节假日从 10 天缩短为 5 天，同时休息日前一晚的额外一小时休息时间将被废除。错开各组工人之间的休息日意味着每名工人工作的时间都相同，而工厂将会全年 360 天运转而不再是 300 天。这 360 天被分为 72 个 5 天工作周。每个单位的工作者（首先是工厂，其次是商店和政府机关）都被分为五组，在这种覆盖全国的新型不间断工作日历上，每一组工人都被分派了一种颜色。颜色代码成为一种有效的记忆方式，以防止工人们由于每周休息日变化而记不清什么时候是自己的休息日。瞥一眼日历的颜色就会知道今天是否该休息，从而让工人们安排自己的活动。但是这个系统不适用于建筑业和季节性工作，这些行业仍然遵循 6 天工作制；它也不适用于需要定期关闭机器的工厂和矿山，他们也遵循 6 天工作制，而不受其他休息日（每人都休息的日子）或持续工作的影响。无论哪种情况，星期日都等同于其他任何一天。

F 官方宣传说这项新方案会带来物质和文化上的收益。工人们将得到更多的休息；产量和就业将会增加（因为需要更多的工人来维持工厂不间断的运转）；生活标准将会得到提升。人们还可以更合理地安排休闲时间，因为文化活动（戏剧、夜总会、体育运动）将不再会挤在周末进行，而是可以丰富地安排在每一天，同时这些设施将不再拥挤。购物也会因为同样的原因而更加轻松。代表无知和迷信的宗教组织将会遭受致命一击，因为在任何一个星期日里都会有 80% 的工作者在工作。唯一的反对来自于那些不止一名成员在工作的家庭，但是既然苏联政府坚持，小家当然没有广大民众的利益重要，另外单位还可以安排丈夫和妻子享有同一个工作日程。事实上，政府长期以来就想要削弱或边缘化其统治地位的两大潜在威胁：宗教组织和核心家庭。宗教已经构不成威胁了，家庭具有更大的反抗性，甚至斯大林最终都不得不承认这一点。

G 就像迎来理想社会一样，时间本身已经被征服，懒散的周日永远被废止，这种不间断的工作制如同传染病般风行开来。据官方数据称，1930 年 4 月之前有 63% 的工人

这样工作着；6 月，所有的工厂都被要求在下一年中完成转变。这场风潮在 10 月影响了 73% 的工人后达到顶峰。事实上，很多管理者表面上说他们的工厂实施了新工作制，但是其实并没有真正采用它。按照规划的要求办事是非常重要的，而实际问题可以暂时靠边站。但是在当时，问题也变得明显了起来。最严重的问题是，工人们厌恶这个工作制度（尽管官方从未承认这一点）。家庭工作日程的协调基本上是不可能的并常常被忽视，因此丈夫和妻子只能在上班前或下班后才能见到彼此，休息日空荡荡的却没有爱人陪伴，甚至朋友也都有不同的工作日程。混乱开始占主导地位：新计划颁布地过于草率，一些工厂同时采用 5 天、6 天甚至 7 天工作制，同时工人们常常一天休息日都得不到。

H 或许苏联政府忽视了这些（这不取决于公众意愿），但是新工作制并没有为生产带来所吹嘘的效果。在复杂的轮休体系里，工作小组必然发现他们自己在连续的工作周里从事不同种类的工作。机器不是一直由了解如何使用它们的人来操作，而常常被错误地操作甚至被损坏。工人们失去了完成特定任务的责任感。

I 结果，这种新工作制开始失去市场。1931 年 6 月，斯大林的一篇讲话批评了草率实施这种工作制度所带来的“灭绝人性的劳累”，这标志着终结的开始。11 月，政府要求全面采用 6 天工作日。在它的日历上，第 6、12、18、24 和 30 号会有规律地休息，但是周日通常还是工作日。到 1935 年 6 月为止，只有 26% 的工作者还在遵循不间断的工作日程，6 天工作日很快就退出了生活。最终，在 1940 年，作为回归传统方式变革的一部分，不间断的 5 天工作制和新鲜的 6 天工作制都被废除，周日恢复为通用休息日。一场构想大胆但考虑不周的实验就这样结束了。

Test 3

READING PASSAGE 1

示例学习法

A 学习理论的研究可以追溯到著名科学家伊万·巴甫洛夫，他早在 20 世纪初就发现并证实了动物（包括人类在内）的学习准则。学习反射或条件反射有两种基本类型，其中之一就是众所周知的经典条件反射。当一个动物学会将一个中性刺激（比如信号）和另一个带有内在意义的刺激（这一内在意义取决于这个刺激与中性刺激发生的时间间距）联系在一起时，就会产生经典条件反射。经典条件反射的典型例子是狗能够将铃声（原本对这只狗没有任何含义）和随后的喂食（这对狗相当有意义）联系在一起。狗能够学会把铃声和食物联系在一起，一旦建立起这种关联，狗在听到铃声之后就会立即分泌唾液。经过数年的学习研究，巴甫洛夫建立起一套非常严谨的学习理论，这套理论被用来理解并预测包括人类在内的动物在何种条件环境下怎么样进行学习，并最终帮助人们弄清楚如何改变人类和动物的行为。

B 榜样模范在儿童发展教育中是一个很普遍的概念，但是近年一些有趣的实验被用来研究示范式学习法在其他物种中的表现。在对受测动物以经典条件反射或有效条件反射的方式进行教学时，我们过于重视让动物们如何去学，却忽视了让它们为学习所做的准备。为了教我的一门课程，我被一本非常有趣并且广受赞誉的文集深深吸引了，这本关于动物社会学习的文集涉及了对黑猩猩和人类儿童的研究，由海泽和格尔夫主编（1996）。

C 在一篇文章所报道的研究中，人们前往以色列的一片松树林进行校园野外旅游，途中发现了许多松果球，这些松果被剥去了外壳一直到内核。一次调查就此开始，这次调查的意图并不是进行理论研究，而是为了发现是谁在吃这些营养丰富的松子，以及它们是如何把松子从松球壳中弄出来的。罪魁祸首被证实是那些行动敏捷、适应力很强的黑家鼠（或称“屋顶鼠”），它们的方法是沿着松球底端到顶部的生长纹路把松果壳咬下来。

D 人们发现城市中的黑家鼠缺少这种技能，即使和会剥松果的家鼠住在一起它们也学不会。但是，城市出生的幼鼠在会剥松果的母鼠抚养下能够学会这项技能，相反，会剥松果母鼠生下的幼鼠在市区母鼠的抚养下便不具备这项技能。很显然，这项技能是从母亲那里学习得来的。更深入的实验表明，不会剥松果的成年鼠在首次看到沿着纹路边沿完全被分开的松球后，就能够学会剥松果的技能；这就像我们在使用新的影印机时，一旦有人给你演示怎么打开它，你自己就可以弄清楚如何去用了。对于老鼠来说，这些幼鼠在母鼠养育的过程中从母鼠那里拿到松球，这使得幼鼠能够学会整套剥松球的技巧。

E 我们可以认为这是抚养期具有适应性的一个极好的例子，但是同时我们还看到了经济性。通过测量老鼠剥松果时新陈代谢所消耗的氧气量可以推算出它的能量损耗，人们将这一损耗与食用松子所获得的热量进行比较。这一能量消耗被证实不到松球能量值的 10%。这是个不错的收益幅度。

F 对于社交性学习的获得性，本耐科夫和巴尔达在 1996 的一篇动物行为文章里提出了不同看法。文章研究了克拉克星鸦（北美星鸦）和墨西哥松鸦（灰胸丛鸦）储藏种子的行为。前者是储藏专家，它能够在分散的储藏点储存约 30,000 颗种子来维持整个冬季，墨西哥松鸦同样储存食物，但是比克拉克星鸦少得多。这两种鸟类的社会结构也不相同，克拉克星鸦常单独行动，而墨西哥松鸦则成群搜寻食物。

G 这项实验的目的不仅是为了探究鸟类是否可以记起自己藏种子的地方，还是为了研究它们能否记得其它鸟藏种子的地方。这个实验的设计有些滑稽，一只储藏食物的鸟在一间屋子里盘旋，这个屋子的天花板有很多的洞，这只鸟在一些洞里储藏食物，而另一只鸟则在笼子中观察监视它。两天后，人们测试了“储存者”和“观察者”发现偶然战果的几率。作为储存者，星鸦甚至不太专业的松鸦都抓住了机遇；但令人惊讶的是，松鸦的观察者和储存者表现的一样好，星鸦的观察者却不尽如人意。这似乎说明，星鸦善于记住它自己的种子藏在了哪里，而群居的墨西哥松鸦更善于记住并且利用其它松鸦储备的食物。

READING PASSAGE 2

新冰川时代

威廉姆·凯瑞并不是一个艺术批评者，而是一名严谨、审慎的气象学家。但是他却花了大量的时间去研究伊曼鲁（Emanuel Gottlieb Leutze）的名画《华盛顿横渡特拉华河》。这

幅画描绘了 1776 年 12 月 26 日，美国殖民地时期的士兵开船去攻打英国和德国黑森州军队的场景。“大部分人认为船上的其他人在划船，但实际上他们是在推开水面上的浮冰。”凯瑞用手指轻点着一幅复制品说。可以肯定的是，为首的水手正在用他的靴子猛击冰冻的河面。“我在费城长大，离画面所描述的地点只有 30 分钟车程。我可以告诉你，画面上的这种事情再也不会发生了。”

可是，这种场景在不久之后有可能再次降临。同时冰雪肆虐的景象也有可能再次袭击欧洲，就像 16 世纪佛兰德斯画家彼得·勃鲁盖尔在画中描绘的那样。在他的许多作品中，包括 1565 年的名作《雪中猎人》，现在温暖的欧洲大陆就像北欧的拉普兰地区一样。由于当时北美和欧洲大部分地区都在小冰川期，因此大约在 1300 到 1850 年间，严寒冰封的场景十分常见。现在，越来越多的证据显示，这种寒冷可能再次出现。越来越多的科学家认为，长期降温或者小冰川期到来的条件已经成熟。但是还没有人预测会出现严冰层，就像 12,000 年前形成的北半球冰川那样。接下来的降温可能会导致美国大部分地区降低 5 华氏度，欧洲东北部、北部以及亚洲北部降低 10 华氏度。

“这可能在最近十年内就会发生。”伍兹霍尔海洋物理研究室主任特伦斯·乔伊斯这样说道。“一旦发生，就会使世界回到数百年前的情形。”他这样警告那些还没有重视这种威胁的美国人们。

下降 5 到 10 度所导致的后果不仅仅使温度计上下波动，经济和生态也都会迅速恶化，并导致灾难性的后果。2002 年国家科学研究院发表了一篇题为《突然的气候变化：不可避免的突袭》的报告，称仅仅是农业损失就达 1000–2500 亿美元，同时预测可能产生大范围且不可估量的生态损害。这是个可怕的景象：森林消失、房屋造价攀升、淡水资源萎缩、农田减产以及物种灭绝加速。

产生这种巨大影响的原因很简单。快速的气候变化与平稳的气候相比造成了更多的破坏。报告认为人类、动物、植物以及与之依附的经济环境就如同河流一样，“举例来说，高水位在溢出河堤之前没什么问题，但一旦溢出就会带来河堤溃塌以及洪灾。许多生态进程都是在特殊的温度和降水的临界期发生变化的。”

从上一次的冰川期以来发生的政治波动可能会使世界上的穷人更加难以生存。在上个寒冷期，部落族群可以简单地整体向南迁移，但这在国界封闭的现代社会是不可行的。文章报道说，“气候的剧烈变化将会直接影响靠土地生存的人，他们的财富会大范围地迅速缩水，同时无法迁移可能会使这些悲惨的人们失去安全的家园。”

但重要的是，难道地球不是在逐渐变暖么？事实的确如此，乔伊斯说到。在鳕鱼岬雾蒙蒙的早晨，温暖的阳光照进乔伊斯略显凌乱的办公室，他解释说天气变暖的程度才是下

一次冰川期到来的主要原因。这个自相矛盾的现象是过去 30 年间大量淡水河汇入北大西洋海水中导致的结果，形成了约 10 英尺厚的淡水层。没人能够确定这些奔流而来的淡水来自何方，但首要嫌疑是由于大气层二氧化碳所引起的温室效应而正在消融的北极冰川。

在海洋科学家们的圈子里，淡水流向是主要的新闻点。曾在檀香山二月会议发出示警的英国海洋学家鲍勃·迪克森提及了拉布拉多海（位于加拿大东北部与格陵兰岛之间与大西洋毗邻的一片水域）盐度和水温的下降。“尽管还有待商榷，但这很可能是现代海洋学记录仪器监测到的最大深幅波动。”

这一趋势将会破坏墨西哥湾流向北渗透的程度，从而带来一场小冰期。通常，蜿蜒流经美国东海岸的加拿大墨西哥湾流充满了从热带地区带来的大量热量。当它向北流动时，水流释放出的热量会使空气升温。由于北大西洋风带向东吹行，因此大部分热气会漂浮至欧洲。这也是为什么大部分科学家认同欧洲大陆冬季温度比美国北部同纬度地区高出华氏 36 度的原因。例如，罗马和寒冷的波士顿几乎处在同一纬度，但罗马却常年温暖宜人。有些科学家认为这一升温同样影响了美国人和加拿大人。“如果认为这种现象仅仅发生在欧洲可就是大错特错了。”乔伊斯如此说到。

将热量释放到空气中的海水水温降低、密度升高，会在北大西洋中沉降一英里甚至更多，这种现象被海洋学家称为热盐环流。巨大的寒冷水域是形成深海洋流的主要原因，这种深海洋流也被称为“大洋转换器”，它流经世界所有的海域。但是当北大西洋被注入大量淡水时，海水密度降低，这使得墨西哥湾流难以沉降。新形成的大量较淡的水体浮在大洋的上层，就像一条巨大的保温毯，威胁着北大西洋热盐环流。反过来，这会使墨西哥湾流流速降低或者向南改向。在未来某个时候，整个循环系统会急速停止。“越来越多的证据表明，我们离临界点越来越近了，那时我们可能会面临一个新的地球。”

READING PASSAGE 3

作物指南

并不是每一位科学家都会给不识字的人写书。又有多少科学家不想让他们的书被尽可能多的人翻阅呢？民族植物学家帕特丽夏·珊丽希望能给帮助她的人一些回报。在亚马逊生活贫苦的居民接纳她研究当地土地和生态之后，珊丽将她的研究成果写成了一本给当地人讲解如何使他们的树木获得良好收益的画册，使他们不用再屈服于伐木公司快速收益的诱惑。这已经取得了巨大的成功。

A 这本书名为《亚马逊人生活中的果树和有用的植物》，但它更为人所知的名字是“作物指南”。这本书的第二版是在亚马逊西部政治家们的要求下出版的。这本书融合了科学知识和当地经验，介绍了 35 种本土森林树种的用途和贸易情况。它被广泛接受（和使用），并由地位极高的巴西环境部长马瑞纳·席尔瓦作序。“珊丽的书是独一无二的，”亚马逊人民与环境学会主席阿道尔波尔托·沃瑞斯莫说，“它把知识交还给真正需要它的穷人手里。”

B 珊丽在十年前就开始为本书做准备工作了。她向 Paragominas 镇的农业工会组织寻求帮助。这座城镇是巴西一个以开采木材为经济基础的城镇。这个组织意识到，伐木公司很快就会找上“卡布卡洛斯”的门了，这些被称为“卡布卡洛斯”的农夫生活在亚马逊巴西支流“瑞欧卡匹姆”沿岸。与世隔绝没有受过文化教育的“卡布卡洛斯”们一点儿都不了解树木的真实价值；下游的人们已经卖掉了大片的森林却只得到微薄的报酬。“他们想知道这些森林真正的价值。”当时身为美国麻省伍兹霍尔研究中心研究员的珊丽回忆道。

C 农业工会组织希望知道瑞欧卡匹姆地区的野生果实是否具有经济价值。“很多人对非木材的森林作物（NTFPs）贸易很感兴趣。”珊丽说。当时，环境保护团体和绿色经济组织也积极推动这个想法。1989 年出版的《自然》杂志中《亚马逊雨林的价值》一文提及了这个想法。研究者们估算出的果实销售收入远远超出了将树木一次性砍伐的销售收入。“工会组织想知道保护雨林从而销售它的果实、猎物和药用植物是否比出售木材更为合理。”珊丽这样说到。这些对“卡布卡洛斯”们是否奏效还有待观察。

D 尽管珊丽是被邀请来瑞欧卡匹姆地区工作的，但是当地一些“卡布卡洛斯”对她仍然充满了怀疑。“在帕特丽夏问她是否能够研究我们的森林时，邻居们认为她是一个来抢掠我们树木的外国人。”若昂·费尔南多·莫雷拉·布雷托这样说到。最终，被当地人称为“曼古额阿”的莫雷拉·布雷托接纳了珊丽，并且和她一起进行研究。从他的土地步行至瑞欧卡匹姆需要一小时，那里几乎完全覆盖在原始森林中。珊丽对这里和其他指定的森林区域的研究使得她能够识别帕库里（普拉藤黄木）、尤克希（内种皮豆木）、皮奎亚（油桃木）三个树种。这三个树种在整个森林里都能找到，它们的果实在“卡布卡洛斯”中很受欢迎。“卡布卡洛斯”们采摘这些果实用来榨油，他们还知道这些果实能引来什么样的野生生物。但是在充满侵略性的伐木公司面前，他们无法对树木的经济价值进行估算。珊丽明白，要想搞清楚这些树木的价值，唯一的办法就是进行一次科学的分析研究。“从科学分析的角度来看，我们对这些树知之甚少。”她这样说到。在 6 年的野外研究中，珊丽得到了大量有关这些树木开花结实的生长数据。在 1993 到 1994 年间，30 个家庭称量了他们从森林取得的所有东西——猎物、果实、纤维、药用植物，并且记录了它们的来源。

E 在 1997 年 3 场原木砍伐贸易和一场大火之后，研究者们能够研究伐木和破坏对生态系统的影响。他们在 1999 年进行了一次类似但是规模小一些的研究，这次只针对 15 个家庭。其中的变化是显著的。在 1993 到 1999 年间，森林果实的年均家用消耗量从 89 公斤降至 28 公斤。珊丽说，“我们发现，采摘果实可以和一定程度的伐木共存，但是在那场森林大火之后，采摘果实数量大幅下降了。”同一时期，纤维的使用也从 20 公斤左右降至 4 公斤。大火和砍伐也改变了“卡布卡洛斯”们原有的饮食习惯。在 1993 年，大部分家庭每月可以食用 2–3 次捕获的猎物。到 1999 年，一年能食用 2–3 次以上猎物就算是幸运的了。

F 失去某些种类的树木所造成的损失是巨大的。珊丽带领的团队说服当地猎手们称量他们的猎物，并记录猎物是在哪棵树下捕获的。一年间，猎手们在皮奎亚树下捕获了 5 个物种平均 232 公斤的猎物。在苦配巴树下，猎手们只捕获了两个物种平均 63 公斤的猎物；在尤克希树下则是 4 个物种平均 38 公斤的猎物。最终，研究小组找到了哪种树值得保留，哪种树可以应该用来销售。“这说明为了几美金把皮奎亚树卖给伐木者是不划算的。”珊丽解释说，“它们的本土价值在于能够产出很值钱的果实，以及它们开的花，这些花朵比其他树种的花朵能吸引更多猎物。”

G 作为研究的结论，珊丽不得不告诉 Paragominas 的农业工会组织，《自然》论文中的理论不能完全套用在他们身上，也就是说采摘非木材森林作物的收益不可能总是超过销售木材的收益。比如尤克希树的结实量就是不可确定的。1994 年，一个家庭能收获 3,654 个尤克希树果实；但在下一年，收获量却为零。

H 这并不是说野生果实不重要。相反，珊丽认为它们对于生存是十分关键的，而这种关键作用在只重视商业价值的非木材森林作物研究中很容易被忽略。瑞欧卡匹姆的“卡布卡洛斯”们建立野生作物贸易的另一个障碍是地理因素：尽管生活在偏远地带的村民们可以划船穿越河流去销售他们采摘的非木材森林作物（NTFPs），但是村民们仍然很难和靠近城市集市的居民进行竞争。

I 珊丽及其同事决定要为工会组织做更多的事情，而不仅仅是一份报告。珊丽和她的两个同事一起写了这本“作物指南”。这本书、《圣经》以及另一本由珊丽合作撰写、给低文化层次人群阅读的药用植物书籍，是你在瑞欧卡匹姆地区能见到的必备书籍。尽管第一版只印刷了 3000 册，但是这本“作物指南”产生了巨大的影响力，它被学院、农民组织、工厂以及“卡布卡洛斯”们广泛使用。这本书的成功很大程度上归功于书中的插图、趣闻、故事和歌谣使得低文化层次人群也能看懂书中的大部分内容。珊丽说，“这本书并没有告诉人们应该做什么，但是它给人们提供了各种选择。”使用这本书的“卡布卡洛斯”们现在更加了解哪种树可以卖给伐木者，哪种树应该得到保护。

Test 4

READING PASSAGE 1

莫扎特效应

A 音乐自古以来就常被用作治愈疾患的工具。《埃伯斯纸草文稿》一书（最古老的医书之一，可追溯至公元前 1500 年）记录了医师用歌声来治愈病人（凯瑟曼，1994）。在诸多文化中，我们都观察到音乐成为惯用的医疗手段之一。然而在西方医学界，在收音机诞生之前，把音乐应用于医学却不甚流行。之后，研究者们才注意到听音乐对人体具有显著的影响。理疗学家们发现音乐可以帮助消除忧虑，研究人员也认为听音乐也可以降低血压。除了这两个领域之外，音乐还被应用在癌症化疗中来减轻恶心程度，在手术过程中来降低压力荷尔蒙的分泌，同时也应用在产妇生产和中风患者康复中（凯瑟曼，1994 和维斯特里，1998）。音乐也被证实可以降低疼痛并能增强免疫力。在日本，各种不同类型的音乐都用于医疗。例如，如果你想治疗头痛或偏头痛，就可以听门德尔松的《春之歌》，德沃夏克的《诙谐曲》或乔治·格什温的《美国人在巴黎》的某一部分（坎贝尔，1998）。此外音乐还被用来促进学习，这种现象叫做莫扎特效应。

B 弗朗西斯·H·劳舍尔博士首先在 1993 年通过实验展示了音乐和学习之间的联系。他的实验显示出听 10 分钟左右的莫扎特音乐就能暂时提升人的智力。几组学生分别进行了智力测试，他们会分别听到一段无声的磁带，或一段放松的音乐，或莫扎特 D 大调钢琴协奏曲。他发现听无声磁带的学生平均智商为 110，听放松音乐的学生的平均智商为 111，而听莫扎特音乐的学生分值却跳到了 119（维斯特里，1998）。甚至那些根本不喜欢音乐的学生智商测试分数也同样上升了。劳舍尔于是提出假设——“听复杂的、不重复的音乐，例如莫扎特的音乐，应该能够刺激对思考至关重要的神经通道”（凯瑟曼，1994）。

C 劳舍尔和斯坦福大学的李宏华用老鼠做了相同的实验。结果显示老鼠的智商也有提高。这些新的研究显示和那些在噪音环境下（例如两个电台调频之间的嘶嘶声）的老鼠相比，那些受莫扎特音乐熏陶的老鼠在下丘脑中“出现了更多的 BDNF 基因（一

种神经生长元素）、CREB（一种增强学习和记忆力的合成物）以及神经突触生长蛋白质”。

D 莫扎特效应的原理是怎样的呢？研究学者们仍然在尝试找出是什么机制真正使得学习效果神经通道得以加强。神经学家猜测音乐确实能够在一种类似于大脑成长阶段过程中帮助建立和强化大脑皮层神经元之间的联系。当一个婴儿出生时，特定的神经元联系应该已经确立——例如心跳和呼吸之间的联系。随着婴儿了解新的信息和新的运动机能发育，新的神经联系也被建立。那些不被使用的神经元最终会死去，而那些被反复使用的则形成较强的联系。虽然建起大量的神经联系需要一个过程，但在特定时间段内他们必定会形成。例如，一个生来就有白内障的孩童就不能在视觉皮层建立连接。如果白内障通过手术被及时清除，那么孩童的视力就能正常发展。然而，如果到了 2 岁之后白内障才被清除，该孩童仍会什么也看不见，因为那些通道已经不能再建立起来。

E 音乐的工作原理同此类似。1997 年 10 月，德国康斯坦茨大学的研究者们发现音乐能够重组神经回路（贝格利，1996）。尽管其中有些回路是用来完成一些弹奏乐器时必须的生理机能，单单听音乐就能强化高阶思维中所使用的连接。因此听音乐被认为是一种头脑的锻炼，它既能提高注意力，又能提高本能意识。

F 或许你对莫扎特效应支持者所持观点存怀疑态度，这么想的可不只你一人。参加音乐课程的儿童的学习能力往往高出常人，但许多人把它归功于性格，例如动力、坚持，即那些在任何学习中都需要的性格特征，同时也有一些这样的观点声称是这些性格特征影响一些实验的结果。

G 除此以外，许多人也不太赞同媒体把一个本身独立的研究变成一个家长和音乐教育家们广泛争论的话题。迈克尔·林顿在他的一篇文章中写道，引起这个现象的研究（加州大学尔湾分校学者们所作的研究）只表明了智商能得到暂时的提升，这种提升甚至还不足以持续至整个实验结束。孔子文化也推崇使用音乐来影响智力，柏拉图在《共和国》中描述理想国度时也提及毕达哥拉斯的音乐。在以上两个案例中，音乐并没有导致巨大的改变，这些理论最终也以消亡而告终。林顿对此进一步提出质疑，“如果莫扎特的音乐能够改善健康，那为什么莫扎特自己体弱多病？如果听莫扎特音乐能够增强智力、激发灵性，那么为什么世界上最聪明和最高尚的人不是莫扎特专家呢？”林顿确实提出了一个有趣的观点，如果莫扎特效应带来如此巨大的改变，为什么没有更多的文献证据呢？

H 莫扎特效应的流行也在逐渐消亡，但是这项 1993 作出结论仍然有着坚定的支持者（和反对者）。那次最初的实验之后也没有涌现出大量的支持性证据。但是，许多在孕期

或让她们的孩子在年幼时弹奏过古典音乐的家长们都声援莫扎特效应。我的一个同班同学曾告诉我，在学习时听古典音乐能帮助记忆。尽管有证据显示音乐能增进脑部活动，但是如果从科学的角度对待这个争论，我们会发现并没有证据充分显示出学习和记忆力得到真正的提升。

READING PASSAGE 2

蚂蚁和橘子

1476 年瑞士首都伯尔尼的农民认定只有一种方法可以除去他们田地里的虫子，从而保护自己的作物。他们把这些虫子带上了法庭。这些虫子被审判，并判有罪，然后被大主教驱逐。在中国，农民们有一个更为实际的控制害虫的方法。与其期望神灵的干预，他们把希望寄托于青蛙、鸭子和蚂蚁。青蛙和鸭子被用来吃掉稻田里的害虫和应对偶尔出现的蝗灾。但是生物防治这一概念源于蚂蚁。更精确地说，始于一种名为黄猄蚁的黄色捕食性橘蚁，在中国南部橘园中用这种蚂蚁来消除虫害已有 1700 多年的历史了。这种黄色的橘蚁是一种织巢蚁，它能把叶子和小树枝用丝织成一个整洁的帐篷似的窝。起初，农民们只是将就着遍地的蚁巢。但是没过多久快速增长的需求就导致这种蚂蚁巢穴交易的飞速发展，一种新型农业也随之诞生——蚂蚁农场。

提及会咬人的昆虫，这种黄色的橘蚁非常出名。甚至从蚂蚁的标准衡量，黄猄蚁也是一种可怕的捕食者。这种跑得很快的大个蚂蚁有着强大的咬合肌——人被咬后感到异常疼痛，但是对许多祸害中国南部广东广西两省橘园的昆虫来说却是致命的打击。17 个多世纪以来，中国的橘农已经驯服了这种六条腿的杀戮机器来保证橘园健康、高产。

橘子这种水果进化在远东，中国人则很早就发现了这种水果滋味鲜美。作为橙子、柠檬和柚子的故乡，中国的柑橘害虫种类也最为繁多。那种生产最甜美的水果——柑橘，或者叫做柑——的树木吸引了大量以植物为食的昆虫，例如黑蚁、吸食树汁的水蜡虫以及吞噬树叶的毛毛虫等。既然有如此多的害虫，果农们也一定有保护果园的办法。

西方国家直到 20 世纪早期才发现中国橘农的这个秘密武器。那时，佛罗里达遭受了流行性柑橘溃疡病的侵袭，于是在 1915 年，美国农业部植物生理学家沃尔特·史温戈被派到中国寻找一种能够抵御这种疾病的各种橘类。史温戈在广州附近的橘园潜心研究，在那里他听说了这种人工养殖的蚂蚁。他还听说这些蚂蚁是临近村落的村民养殖出来成批卖

给橘农的。

关于这种橘蚁的最早记录出现在由嵇含于公元 304 年所著的一本关于热带和亚热带植物学的书中。“肇庆的居民在市场上成袋出售装在草袋里的蚂蚁。它们的窝有着丝绸般的质地。这些袋子全部系在叶子和小树枝上出售，袋里装的就是这些蚂蚁。这些蚂蚁黄色里泛着一点红，比普通的蚂蚁大一些。在南方，如果橘树上没有这种蚂蚁，它们的果实就会被很多害虫侵害，没有一颗果实会是完整无缺的。”

最初，果农们依靠从野外采集或从市场上买回来的一窝又一窝的蚂蚁，市场上蚂蚁交易很是繁荣。大约公元 890 年，刘恂在《岭表录异》中写道：“据说在南方，没有蚂蚁的橘树经常结出生虫子的果实。因此人们往往争先恐后地跑去买成窝的蚂蚁。”

这项贸易变得越来越复杂。从公元 10 世纪开始，村民开始使用各种诱饵来捕捉蚂蚁。“果农们经常从那些收集和贩卖这种小生物的小贩手里购买蚂蚁，”庄季裕在公元 1130 年写到，“他们把猪或羊的膀胱塞满脂肪并把这些东西放在蚁巢的旁边来捕捉蚂蚁。他们通常会等到整窝蚂蚁全部搬到他们精心设置的陷阱中，这时就可以收工了。这个过程也通常被称为‘养橘蚁’。”之后农民再把这些住满了蚂蚁的膀胱挂在树上，不久这些蚂蚁就会分布到其他树上并开始搭筑新的巢穴。

到 17 世纪，果农已经开始在树和树之间搭建通道来加快蚂蚁在果园中传播的速度。这些蚂蚁沿着这些窄窄的桥梁从一棵树爬到另一棵树上搭建“成千上万的窝巢”。

但是这真的管用吗？显然果农们是这样认为。一名地方官员在公元 1700 年的一份官文中强调了保持果树无害虫的重要性，尤其是毛毛虫。“非常有必要除去这些虫子以保证果树不受损害。但是人工杀虫远远不及蚂蚁高效……”

史温戈同样也对这些蚂蚁和它们神奇的作用赞叹不已。但是西方生物学家却持一种怀疑态度。在西方，使用一种昆虫来消灭另外一种昆虫尚是史无前例且充满争议的。这种怀疑态度直到 1888 年才被打破，当时若不是有澳洲瓢虫相助，加利福尼亚早期的橘子种植业恐难免灭顶之灾。但是，正如史温戈所深知，加利福尼亚绝不是最先使用生物防治技术的。中国人早在数个世纪前就已经是生物防治技术的专家了。

然而在二十世纪 50 年代和 60 年代，随着强大的有机杀虫剂引入农业，橘园中使用蚂蚁杀虫的久远传统逐渐消失。虽然大多数果农转而使用化学物质，仍然有一部分继续使用传统方法。没过多久那些放弃蚂蚁转而使用化学杀虫剂的人发现自己的幻想破灭了。伴随着杀虫剂价格的不断上升以及害虫们逐渐形成了抗药性，果农不得不重新使用古老的蚂蚁大军。他们也有理由相信蚂蚁大军。

19 世纪 60 年代的研究指出，只要这些树上有足够的蚂蚁，它们就能出色地驱除各种各样的害虫——主要是大一些的害虫——其余的虫子一般也能驱赶掉。有这些黄色蚂蚁的树比没有黄色蚂蚁的树会多出 20% 的健康树叶。最近的一些测试也显示出这些果树生产出的果实和那些使用昂贵的化学杀虫剂的果树生产出的果实一样大。

使用蚂蚁进行昆虫防治的一个显著缺陷——同时也是西方科学家对生物防治技术持怀疑态度的一个主要原因——就是橘蚁难以有效控制水蜡虫。水蜡虫是一种浑身布满蜡质且能有效破坏果树的害虫。事实上，这些蚂蚁反而会保护这些水蜡虫以换取它们分泌的甜甜的汁液。虽然橘农们一直否认这个问题，但是西方的科学家们认为他们对这问题有更深刻的认识。

19 世纪 80 年代的研究显示，橘农们一直以来都是正确的。在蚂蚁保护下成长的水蜡虫通常会被寄生虫侵害，这限制了它们的祸害行为。

这些依靠肉食蚂蚁而非有毒化学物质的橘农们在橘园中保持了物种间的平衡。一方面蚂蚁除掉大型害虫，其他的捕食者则有效控制了介壳虫或蚜虫类的小型害虫的数量。长期来看，蚂蚁导致的损害比化学杀虫剂要小得多——当然用它们来对付害虫比教会驱逐更是有效得多。

READING PASSAGE 3

音乐：我们共同的语言

A 音乐是人类少有的几种共同能力之一。不需要任何正式训练，不论是石器时代的部族成员还是现代都市的青少年，任何人都能欣赏音乐，从某种程度上说甚至是创造音乐。其中的原因仍然是个谜。但是，音乐并非每天生活的必需品，如果说它能够促进人类繁衍，那也仅仅是通过一种极其间接的方式。然而语言相对来说却是无处不在——其原因显而易见：有了语言你和你的族人能组织穿越非洲的迁徙，能建造小船跨越大海，甚至能在看不到对方的漆黑夜晚互相交流。现代文化及其所拥有的种种科技都直接源于人类对符号及其规则的运用。

科学家们也总是对语言和音乐之间的联系痴迷不已。然而长久以来，在实验室和课堂里语言和音乐却有着不同的地位。语言已经被确认为解开人类智慧之谜的关键所

在，音乐却被认为不过是人类进化进程中的小插曲——仅仅是“听觉的点心”罢了，哈佛大学认知科学家史蒂文·平克如是说道。

B 但是在长达十年之久的神经科学研究的推动下，这种趋势正在发生变化。一系列最新的研究文章表明音乐和语言一样能够告诉我们“我是谁？”“我从哪里来？”——不仅仅是情感方面，同时也是生理方面。在七月，期刊《自然神经学》还为此发行了一期特刊。同时在 8 月 6 日这一期《自然神经学》的一篇文章中，杜克大学的大卫·施瓦兹，凯瑟琳·豪和戴尔·博维斯辩论说音乐的声音和语言的声音是紧密联系的。

要想充分理解这个观点，有必要先了解传统上人们是怎么理解音乐的。这包含两点：首先，音乐学家们很早就强调尽管每个文化都为自己的音乐打上独特的烙印，但音乐是一种人类共有特征。例如，在所有文化中声音都被分成或多或少 12 个组成半音音阶的间隔——也就是钢琴琴键上所代表的音阶。若干个世纪以来，观察到这个现象的人把这种特定音阶组合归因于声音本身的数学特质。

2500 年前，毕达哥拉斯第一个指出音阶组合的和谐性和发出这种声音的乐器实际尺寸之间具有直接联系。例如，一个被拨动的琴弦总是比其一半长度的琴弦发出低一个八度的声音，比其三分之二长度的琴弦低五分之一。这个简单的数学比率与声音和谐性之间的关系从此深深地影响了音乐理论。

C 这个“音乐就是数学”的观点也时常伴随着另外一个理论——至少正式说来，音乐的存在不依附于自己被创造的世界。钢琴家及评论家查尔斯·罗斯最近在《纽约书评》里讨论到这个存在已久的观点——绘画和雕塑至少重塑了自然世界的一些方面，文学作品描述了我们熟知的思想和感受，而音乐则是完全从我们生存的世界中抽象出来的。然而依据大卫·施瓦兹及其同事的说法，以上两种观点都是不正确的。从本质上来讲，人类对音乐的喜好不是由精准的公式或比率所决定的，而是由生活周围嘈杂的声响，尤其是人们的言语塑造而成——而后两者又受到人类进化的影响。施瓦兹说，“解释音乐应该和解释大脑的其他产品一样，必须扎根于人的生理，而不是数字。”

施瓦兹、豪和博维斯分析了来自多种语言的声音样本以揭示各种言语背后共同的声音特征。为了能够把重心只放在原始的声音上，他们放弃了所有关于语言及其表达意思的理论，并把句子随机拆分成一个个部分。通过研究一个包括 100,000 个这样语言片段的数据库，他们能够指出哪个频率在不同声音中强调地最多。他们发现，这个最终得到的频率集合和半音音阶有着紧密的联系。简单说来，搭建音乐的基本要素就存在于我们的语言当中。

其实这一点也不抽象，音乐表现出了一种与语音规律对应的奇特的关系。“就像视觉艺术，音乐也深深地植根于我们对于自然世界的经验，”施瓦兹说，“就像视觉艺术模拟视觉环境一样，它以一种独特的方式模仿我们的声音环境。”从音乐中我们听到了最基本的发声器官——声道的回响。以这种方式对人类音乐进行解释比毕达哥拉斯用数学公式来解释要简单地多：我们喜欢听熟悉的声音——尤其是那些让我们想起自己的声音。

这也引出了“鸡或蛋”的进化争论。有些研究者说，也许是音乐直接模仿了日常的言语，这样看来就是语言就先完成了进化。然而也有可能是音乐先完成了进化，而语言实际上是对歌曲的模仿——也就是说在日常话语中我们发出自己最喜欢的声音。从另一个角度来看，也可能是音乐模仿了人类自然发声系统产生的一般性产品，其中大多数正好就是人类语言。“我们很难知道这一点，”施瓦兹说，“我们所能知道的是音乐和语言来自于同一系统，也就是这个系统塑造了我们的喜好。”

D 施瓦兹的研究对于人们长久以来思考的另一个问题——动物是否能够理解或欣赏音乐——也有借鉴意义。尽管自然界中明显充满了“音乐”——鸟儿的歌声、鲸鱼的乐曲、苍狼的长嚎、黑猩猩间的叫喊——之前的研究显示许多作为实验对象的动物对人类音乐并没有表现出浓厚的兴趣。

来自哈佛大学的马克·豪斯威尔和约什·麦克德莫特在七月份的《自然神经科学》中辩称，动物不像人类那样创造或接受音乐。他们说，实验时猴子显示出对人类音韵有所认知的事实只是证实了猴子和我们具有相同的听觉系统，而非某种特殊的灵长类音乐才能。至于鸟，通常被认为是最具有音乐天赋的动物，它们基本上只能认出自己的乐律——一个相当狭窄的区间——却无法像人类一样创造韵律。所以从来也没有过“鸟类莫扎特”。

但是施瓦兹也强调，我们播放给动物的都是人类的音乐。如果动物的音乐喜好跟我们有相同的进化过程——基于生存环境中的声音——那么它们的“音乐”从本质上就和我们的不同。同理，我们的乐律源于我们自然的言语，猫的乐律也应当来源于其喵喵叫声。为了证实动物欣赏音乐的方式和我们有所不同，我们需要找到其他证据，即动物对从它们自己的声音环境中创建的“音乐”也没有反应。

E 无论以何种方式理解语言和音乐之间的联系，显而易见的是我们对音乐的感觉和热情深深植根于自身的生理构造和我们的大脑，就像语言一样。这一点在婴儿身上体现得非常明显，多伦多大学的桑德拉·特拉赫布在《自然神经科学》特刊上如是说。

对于婴儿，音乐和语言是一个连续体。母亲使用音乐式的语言来“调节婴儿的心情”，

特拉赫布说。不论使用什么语言，所有母亲使用的声音是一样的："一种介于音乐和语言之间的东西"。这种交流"使婴儿们介于一种类似催眠的状态，并使他们入睡或处于持续的痴迷状态"。因此，如果婴儿们能够理解最新的语言和音乐之间的研究，他们不会感到惊讶。"结论就是，"特拉赫布说，"尽管我们还未意识到，但音乐也许是一种必需品。"

Test 5

READING PASSAGE 1

神奇的植物

未来堪忧的神奇植物：超过十亿人使用竹子搭建房屋或是以它为经济收入，同时很多濒危物种也依赖竹子而生存。虽然竹子分布广泛，但据一份新报告称，可能有多种竹子正处于严重的威胁之中。

A 每年的雨季，中非的山地大猩猩就会迁移到丘陵和维伦加山的缓坡地区，寻找竹子作为食物。对于现存的大约 650 只野生山地大猩猩来说，竹子是一种非常重要的食物来源。尽管它们可以食用大约 150 种植物和各种昆虫以及其他无脊椎动物，但是每年的这个时候竹子占到它们食谱的 90%。猿类同盟会主席伊恩·瑞德蒙德表示，没有竹子，山地大猩猩存活的几率将大大降低。

当地并不是只有大猩猩在食用竹子。对于居住在维伦加山附近的居民来说，竹子是一种用途广泛的天然材料，可以用来搭建房屋以及制造家用物品，例如竹席和篮子。但是在过去大约 100 年间，随着人口的增长，大面积的竹林被砍伐，原来的林地用来建设农场和种植经济作物，这使得竹子资源受到了越来越大的压力。

B 可悲的是，并不是只有此地区存在这种情况。在全世界，许多品种的竹子数量开始萎缩，依赖竹子生存的人和动物都受到了威胁。尽管竹子如此重要，我们对它的无知却到了惊人的程度。联合国环境保护组织（UNEP）和竹藤植物国际网络组织近期发布的一份报告显示，人类对全球竹类资源知之甚少，在竹类保护方面更是一无所知。

世界上有大约 1600 种已知的竹子种类，这份报告集中研究了其中的 1200 种以及人们通常认识的硬茎木本种类。在这其中，研究者只针对 38 种有经济价值的“重要品种”进行了真正意义上的科学研究，而研究的内容则主要是这些竹类作为商品的生存能力。

不仅仅是对竹子的研究存在这种问题。和动物研究工作相比，植物生存状态测评的科学研究才刚刚起步。“人们在过去的 10–15 年间才开始重视这件事，至于如何系统处理这件事，人们现在才刚刚摸到一点头绪。”报告作者之一，UNEP 森林生态和保护领域的高级顾问瓦莱丽·卡波斯博士这样说道。

C 竹子是草类的一种，它的外形多种多样，高度从 30 厘米到 40 多米不等。竹子也是世界上生长最快的木本植物，有些品种一天能长 1 米多高。竹子的在自然生态的角色不只是为动物提供食物和栖息地。它的地下根茎系统能长出成组的独立的竹子，从而在地表土层形成庞大的根系，这对防止土壤侵蚀至关重要。同时越来越多的证据显示，竹子在决定森林结构和动态过程中扮演着重要的角色。“竹子大范围开花后会导致大量叶片枯死，并留下大面积极易引发野火的干燥生物物质。”卡波斯说。“它们燃烧后会在森林中留下小片空地，这远比砍倒一棵树留下的空地大得多。”这些小片空地有利于保持物种多样性，因为某些植物种类在有空地的土壤上生长时，其早期再生过程会更容易。

D 然而，竹子最直观的重要性在于它的经济价值。现代生产工艺意味着竹子有着多种用途，例如制造地板材料和层压制品。竹类产品中增长最快的是造纸——在印度，25% 的纸张由竹纤维制成；在巴西，有 100,000 公顷的竹林是为造纸而种植的。

当然，竹子的主要功用一直都是用来制作家用器件，在当地这种竹类商品贸易年均价值达 45 亿美金。由于竹子的多用性、灵活性和高强度（竹子的拉伸强度可以和某些钢材相媲美），传统上人们将它用于建筑领域。直到今天，全世界仍有超过 10 亿人居住在竹制房屋里。皇家植物花园的研究员克里斯·斯塔布雷顿说，在许多发展中国家，竹子往往是唯一一种容易获取的天然材料。“人们可以在森林地区砍伐竹子，或者在其他地方种植这些迅速生长的竹子，而且加工竹子也不需要昂贵的器材或设备。”他这样说道。“这样说来，竹子在缓解贫困和创造财富方面贡献很大。”

E 考虑到竹子的经济价值和生态意义，UNEP 报告所描绘的景象更有理由让人们担忧。但是热心的园艺家们会在这里指出一个显而易见的矛盾。那些跟风在自家花园种植奇花异草的人们将会质疑这些观点是否属实，因为竹子实际上会带来很多麻烦。“在许多地区，和竹子一起生活的人们并没有意识到竹子已经濒临危险了。”卡波斯说，“事实上，很多引进的竹子品种表现出很强的侵略性。”那么为何有这么多竹子品种濒危呢？

英国竹类协会副主席、皇家植物花园的植物园经理雷·汤森德指出，这是两个毫不相关的问题。“一些植物濒临险境是由于无法在生长地自我生存——它们可能不够强壮，或者本身数量就很少。但是竹子本身是能够自我繁殖的——如果放任其生长，

它完全能够自我生存。受到威胁的是竹子的生长地。”竹子受到的威胁是一种本质的干扰，卡波斯说，“如果森林消失了，竹子就只能转变自己的生存方式：如果把森林变成畜牧草地，那么诸如竹子之类的森林植物是无处生长的。”

F 在世界各国的国家公园和国家森林储备中，竹子作为森林系统的一部分得到例行保护，可这对保护野生竹子本身来说没有任何意义。但是对此情况，我们已经取得了小小的进步。UNEP-INBAR 组织的这份报告将有助于自然资源保护主义者建立起有效的方式来保护有价值的野生竹子种群。

汤森德认为 UNEP 的这份报告为促进竹类植物保护迈出了重要一步。“直到现在，竹子仍被看作是二类植物。当你谈及亚马逊这样的地方时，每个人想到的都是阔叶树。当然，阔叶树是这些地方的主要植被，但是人们往往会忽视阔叶树周围生长的植物，而这些通常是竹类种群。就很多方面而言，竹子都是对人类最重要的一种植物。我想不出其它任何一种植物能像竹子一样应用如此之广泛，并且在这么多国家具有如此重要的经济意义。”他认为最重要也是首先要做的就是派科学家到野外去。“我们需要去实地考察，观察那些植物并要了解它们如何是生长的，将来就可以基于这些信息来保护它们。”

READING PASSAGE 2

儿童文学

针对儿童的故事、诗歌创作已经有相当长的历史了：例如催眠曲，在罗马时代就开始哼唱了，一些幼儿游戏和押韵诗也是自古流传的。然而就书面文学作品而言，尽管在 1700 年前就存在一些印刷版故事集，例如伊索寓言、神话传说以及流行的民谣和爱情小说，孩子们有机会就会进行阅读，但是准确来说这些故事集并不是专门针对年轻人而创作的。由于这一时期真正的儿童文学只是一些促进阅读和传播常识的指导性书籍，再加上禁欲主义对社会道德观的影响，渴求知识的孩子只能去阅读成人文学作品。现在这种现象仍然存在，特别是在成人恐怖小说和爱情小说领域，这些作品比通常能看到的儿童文学作品更刺激、更生动。

到 18 世纪中叶，已经出现大批渴求阅读的儿童读者，以及大批愿意满足孩子阅读兴趣的家长。这一群体的人数多到足以使出版商们专门出版儿童读物，这种读物的初衷是趣味性，而不是以教育、道德为宗旨。在英国，一个名为托马斯·伯瑞汉姆的商人于 1742 年

出版了《卡加纳斯——瑞典巨人》，同时更著名的约翰·纽伯瑞于1744年出版了《有趣的小口袋书》。它的内容——诗歌、故事、附赠免费礼物的儿童游戏（“一个球和一个针垫”）——从多个角度预示了本世纪儿童读物的内容结构类似于百宝囊。纽伯瑞的成功模式发展得非常迅速，以至于一夜间就成了美国各地竞相抄袭模仿的对象，这其实是对他的聪明才智的一种褒奖。

这种轻率的逗乐方式是无法持续的。卢梭在《爱弥儿》（1762）一书中认为，除了《鲁滨逊漂流记》以外的儿童读物都是危险的消遣。受这种思想的影响，当代评论家们开始认为儿童文学应该具有教育意义和鼓舞性。在众多声音中比较突出的是莎拉·崔莫夫人，她的《教育守护者》杂志（1802）开创了针对儿童书籍的首份期刊式评论杂志。正是她抨击了神话故事中的暴力与荒谬情节；她自己的故事书《神话史》（1786）则描绘了一群会说话的、成为智慧和礼仪典范的动物。

考虑到在这种严厉的德育家的教育下孩子们会远离娱乐，这种儿童德育性质的故事一直都饱受批评。促进儿童读物发展最强劲的浪潮来自一个意想不到的领域：19世纪早期就开始的民间传说。詹姆士·欧查德·哈利维尔1842年为一家民俗协会选编的《儿童歌谣》以及1823年被迅速引进英国的《格林童话》在年轻人之中迅速蹿红，并很快就出版了新的版本，每本书都比过去更以孩子为中心。从那时起，年幼的孩子可以期待针对他们的兴趣而编写的故事，同时这些故事和他们所拥有的有限生活经验相适应。

然而并不是市面上可以买到的此类儿童读物最终决定了年长孩子的阅读方向，而是孩子们可以读到那些有人物角色的书籍，比如年轻人或者小动物。孩子们对于这些角色更有同感，更乐于模仿那些不需要成年人的成熟和理智的行为，例如探险或战斗。

儿童文学最后的理想主义典范诞生于20世纪30年代晚期，作为回避沮丧现实的产物，以娱乐为主旨的儿童书籍成为避世主义者的畅销书。在英国，就像伊妮德·布莱顿和里奇曼·克朗普顿等小说家描绘的那样，孩子们在书中总是可以自由地从事最不可思议的冒险，并且保证最后不会有任何糟糕的事情发生在他们身上。在伊妮德·布莱顿的书籍最为畅销时，战争爆发了。这一事实使得人们无法再进入到她书中年轻的主人公所居住的自我世界。与这种梦幻世界相反的回应在第二次世界大战结束后不可回避地产生了，同时平装本图书销量上涨，儿童图书馆不断增多，新的道德观和社会关注点也在增加。在坚定的出版商和进步的图书馆工作者的推动下，作者们慢慢地开始探索新的兴趣领域，同时也将他们的情节编排从中产阶级世界逐渐转移到给予他们赞助的上层人群所拥有的世界中。

在这一发展时期，评论重点被分化了。对一些人来说，最重要的任务是去除儿童书籍中的社会偏见和不再被人接受的排外性。另一些人则更重视当前的儿童文学是否具有积极

意义。这些作品的作者现在经常被建议重视成年人的态度，就像 19 世纪儿童读者反馈的那样，儿童文学可以被几代人共享，而不是在孩童期和长大成人的必经之路上设置藩篱。

READING PASSAGE 3

滑石粉

彼特·博瑞格发现了法国鲁兹那克公司崔曼斯矿的滑石粉是如何应用到食物和农产品之中的——从口香糖到橄榄油。

在法国比利牛斯山海拔 1700 米高的崔曼斯矿山上，有着巨大的水性镁硅酸盐矿——也就是我们熟知的滑石粉。崔曼斯矿的滑石粉和全球其他 10 个鲁兹那克集团矿山的滑石粉一样，被广泛应用于从纸张、涂料、石膏到化妆品、塑料、汽车轮胎等一系列日常用品的生产制造中。当然还有众所周知的滑石粉终极用途：婴儿爽身粉。但是这种非凡的矿物质所展现的多用途适用性都比不上它在食品和农产品这些特定市场中的表现。

以咀嚼式口香糖市场为例。每年，拥有并运营崔曼斯矿的鲁兹那克国际集团分公司（力拓矿业集团子公司）——法国鲁兹那克滑石粉公司——为欧洲口香糖制造业提供大约 6000 吨滑石粉。“我们从 20 世纪 60 年代开始就已经占领了这部分市场的销售。”鲁兹那克公司设在图卢兹的专项贸易部销售经理劳伦特·佛尼尔这样说道。“不可否认，我们供应给口香糖制造业的滑石粉年均总销量相对其他领域算是少的，但我们认为这是有价值的获利市场：这个市场中的消费者对来自可靠的、高质量原料产地的安全货源表现出额外的青睐。因此，长期忠于一家可信赖的供应商是这部分滑石粉市场的重要特征。”佛尼尔接着说，“改变原料——这意味着你可能需要选择购买并了解不同产品，选择与供货商 A 而不是供货商 B 合作——这对口香糖制造厂家来说并不是一个简单的选择。重新签约的成本是高昂的，因此当采购者采用了某种滑石粉来生产其产品时，即使这种滑石粉很贵，采购者也不愿意更换。”

但是在实际过程中，滑石粉是如何被应用于口香糖制造的呢？拥有农业经济学学位的工程师帕特里克·德罗德在鲁兹那克公司已经工作了 22 年，现在担任公司欧洲农业与食品部门的高级市场发展经理。他解释了口香糖所需要的四种成分。“最重要的一种是胶基，”他说，“正是胶基使得口香糖能够被咀嚼。它将所有原料糅合在一起，制造出柔软、平滑的质感。然后制造商向其中加入糖精、软化剂和调味剂。我们的滑石粉被用来做胶基的填充剂。添加剂量要视情况而定，从 10% 到 35% 不等，这取决于口香糖的类型。例如，

水果口味的口香糖是微酸性的，会和制造商采用的另一种填充剂钙碳酸脂发生反应。与之相反，由于滑石粉没有化学反应性质，它就成为了一种理想的填充剂。在工厂里，滑石粉还用于去除作胶基上的粉末，防止口香糖在压制和包装过程中粘连在一起。”德罗德补充到。

但是，口香糖只是滑石粉在食品领域中应用的一个例子。在西班牙，橄榄油制造商利用滑石粉的独特性能来提高他们从橄榄中榨油的产量已经近 20 年了。据帕特里克·德罗德介绍说，滑石粉在处理他称之为“困难的”橄榄时特别有效。在橄榄被收获后——通常清晨最佳，因为在每天的低温时刻采摘的橄榄口感更好——它们就被运往处理车间。在那里，橄榄被压碎并搅拌 30–45 分钟。过去，人们通常将生成的橄榄糊压在橄榄模具中。但现在，在离心机中加水并从固体物质中进行水油分离的做法更为普遍。之后再将水和油进行沉淀，这样就能将橄榄油层轻轻地倒出并且装瓶。“困难的”橄榄是指那些比一般橄榄更难榨出所有油分的橄榄。这可能是由于橄榄的特殊种类，或是由于它的水分含量和橄榄的采摘时间——在收获季开始或结束时采摘的橄榄水分含量往往会过高或过低。这些橄榄很容易辨认，因为它们会在搅拌过程中产生大量多余的泡沫，当这样的固体超量时其结果就像是天然的乳化剂。这种乳化物中的油分会随着水分的处理而损失掉。不仅如此，如果把这种废水直接倾倒进当地田野中——这通常发生在许多小加工作坊里——乳化的油分将会花很长时间才能被生态分解，这对环境十分有害。

“如果你在搅拌过程中加入总重量 2.5% 的滑石粉，它就会吸收掉橄榄中的天然乳化成分，从而提高所能榨取的油分量。”德罗德这样说到。“此外，滑石平坦的‘碟型’结构有助于增加那些在搅拌过程中挥发的油滴的体积，这又增加了产量。同时，由于滑石粉是一种化学惰性物质，因此它不会影响成品橄榄油的颜色、口感、外观或成分。”

如果说橄榄油工艺和口香糖生产中使用滑石粉是以前很早就有的，那么在食品和农产品工业中的新应用则是鲁兹那克公司不断追求的。其中一个大有前景的新兴市场便是水果作物的保护工艺，这在美国正在逐渐兴起。就像人类一样，水果也会被晒伤。事实上，在日照非常充足的地区，高达 45% 的作物会被热浪和晒伤影响。但是对水果而言，并不是紫外线伤害了作物，而是太阳光线产生的表面高温。

为了避免这一点，农民们通常会使用化学药品或者在果树或枝叶上不断地喷洒水雾。问题是，这会消耗大量的水——在炎热日晒的地区，水通常是极为珍贵的——因此成本是昂贵的。此外，土地很快就会变成渍涝状态。“因此，我们想给水果穿上外套，用滑石粉来保护水果免于日晒。”在鲁兹那克公司工作 10 年之久的营销专家格雷格·汉特这样说到。“但是这样一来，有几项工艺难题就会首先摆在面前。滑石粉是非常怕水的：它不喜欢水。因此为了制造实用的产品，我们必须研制出可湿的滑石粉——一种容易混合进悬浮液的东西，以便人们将它喷在水果上。它不会破坏水果表面角质层（水果上的天然防水蜡质层）

的张力，同时还要在水果收获时能被轻易洗掉。没有人会愿意买一个覆盖着滑石粉的苹果。”

2003 年在华盛顿州进行的最初一些实验表明，当把这种产品喷洒在“史密斯老大娘”苹果林上时，水果表面的温度降低了，同时水果晒伤发生率降低了 60%。现在，名为“Invelop® Maximum SPF”的新产品进入美国市场已经有 2 个贸易年了。苹果种植者是首要的市场目标群体，同时汉特认为葡萄种植者是另一批拥有长期潜力的客户群。他对将销量扩展到海外如澳大利亚、南美和南欧也充满了信心。

READING PASSAGE 1

成功的芬芳

许多创新最终都不了了之——欧斯克林却将柠檬变成了一种胜利的象征。

A 创新和企业家精神合理搭配后，可以带来引人瞩目的成绩，可以造就一个产业。从希尔斯升降晾衣架到人工耳蜗装置，总结这一系列各不相同的商业成功事例，我们不得不说那些发明家发明的产品正是消费者最急需的东西。但是，大多数发明点子都是无法迎合市场的。潜在投资者们不断获取一些创意，比如新型节水淋浴头、无匙锁闭系统、防污染的雨水箱乒乓球、植入干细胞从而促进牙齿生长的口香糖、以及防止液化气罐爆炸的新技术。创新变革组织一直致力于成为经营者与创新成果之间的桥梁，其首席执行官格兰特·科尔尼说，他意识到大量商业发明根本没有市场价值。“显然，那些发明本身没什么用途。一个创意只有和正确的资源、资金联系起来时，才会转化为创新产品。”

B 澳大利亚最近一个成功的发明案例是一种被称为“沐浴动力”的柠檬味浴室清洁剂，这种配方是由昆士兰州亚塔拉一家工厂研制的。1995 年，汤姆·昆尼和约翰·希伦以 250,000 澳币收购了一家处境困难的清洁产品公司——欧斯克林公司。当时它销售 100 种不同的清洁产品，大部分是以散装批量交易的。公司境遇糟糕，清洁剂的配方即低效又污染环境，也没有什么固定客户。然而现在，“沐浴动力”成为澳大利亚最畅销的浴室清洁产品。在过去的 12 个月里，欧斯克林牌清洁剂售出了大约 4 百万瓶，公司预计 2004 年销售量能达到 1 千万瓶。2003 年，公司销售额达到了 1100 万美元，其中 70% 都来自于出口贸易。尤其是在英国，“沐浴动力”已经给英国市场带来了巨大冲击。

C 在昆尼和希伦雇佣一名工业化学工程师重振生产线之后，欧斯克林的业绩开始好转。市场研究显示，人们需要一种更好的浴室清洁剂，大家普遍认为浴室是家里最难清

洁的房间。同时公司希望使产品配方更加环保。当时，汤姆·昆尼年仅24岁的儿子彼特开始和这名化学工程师一起研制配方，研究柑橘味清洁产品配方的可能性。当时市场上主流产品都有氯气味，他非常不喜欢这点。他说，“我们不想使用氯，原因很简单，氯气给人们带来糟糕的工作环境，而且这也挣不到什么钱。”他研究了诸如橘皮之类的各种柑橘味原料，来替代清洁剂中的石油副产品。他成功研制出了“沐浴动力”的配方。“这个秘方藏在公司某处的一个保险柜中，当然还有我的脑海中。”他说道。这家公司是这一知识产权的唯一拥有者。

D 刚开始，“沐浴动力”只是以商业瓶装量来销售。但是在布里斯班附近的比雷大道零售店里，750ml装的产品好评如潮。于是汤姆·昆尼决定将产品以每瓶750ml的量进行销售。顾客们驱车从很远的地方来购买商品。另一些顾客则写信给欧斯克林公司，称赞“浴室动力”有多么好用。“我们以前在沃尔沃斯连锁超市贴签销售。”汤姆·昆尼说道。沃尔沃斯的消费者买了一瓶带回家，结果将她水池中以前清不掉的顽渍统统清除了。从此，这名消费者就成了“浴室动力”的忠实消费者，同时欧斯克林获得了第一份超市订单——价值3000元的“浴室动力”专柜。“我们简直欣喜若狂。”欧斯克林的财务总监贝琳达·麦克当娜这样说道。

E “浴室动力”于1997年在澳大利亚各大超市上市销售，6个月内就成为同领域中的最畅销产品。为了满足需求，整个工厂全力开工，给“浴室动力”的贴签、装瓶。欧斯克林暂停了其他所有的产品，并围绕“浴室动力”重建了公司体系。这是个非常艰难的阶段，麦克当娜重申道，“我们的经济状况只能勉强维持正常开支，现金周转非常困难。”欧斯克林不得不向超市连锁店支付新产品线的费用，这一点也压缩了公司的利润。

F 科尔斯迈尔连锁超市一名执行官的女儿在昆士兰度假时使用了这项产品后，欧斯克林再一次取得重大突破。她说服了她的父亲在科尔斯迈尔连锁超市销售“浴室动力”。尽管当时取得了成功，但是彼特·昆尼说公司对销售能持续多久仍然很谨慎，同时犹豫着是否要投资升级生产工艺。结果，他很长一段时间里都要日以继夜地工作来满足订单。小型箱罐仍然在使用，这样一来每批的产量也很小，同时瓶体贴签也都是手工进行的。欧斯克林这家私有企业需要扩大现金流量。“这些设备满足不了需求。”彼特·昆尼说。最终，他们购进了一台价值50,000元的装瓶器，该新型设备能够精简生产程序。但是彼特说，“这设备远不值这么多钱”。因为当时他正在研究一种能够控制液体中泡沫产生量的新型自动装瓶机，这样这些瓶子就能装更多的产品——“我喜欢想出一些新点子。”他们正为这项设备申请专利。

G 彼特·昆尼认为欧斯克林的研究和发展方式是非常开放的。“我需要什么，我就能得到什么。我们只是在做一些别人没有想到的简单的事。这些事大多是坐等人们来

做……我们只需要寻找机会。”欧斯克林公司带着这项经受了考验的产品扩展到海外市场，同时发展了更多的动力系列家用产品。曾是不动产商人的汤姆·昆尼说：“我们参与全球市场的竞争，这些（清洁）产品在世界各地都有销售。”“浴室动力”在英国被称为“浴缸动力”，它于4年前在联邦政府一个出口发展规划的帮助下登陆英国市场。“我们当时想立刻就那么做，因为我们已经意识到我们的产品在全世界都有同等的机会。”目前欧斯克林已经是英国市场的第三大供应商，它的下一站将是法国。动力系列产品包括地毯、厨房、污渍预处理等清洁产品。昆尼和希伦的家人也都参与到这项生意中。现在已经有公司表示有意向收购欧斯克林，但是汤姆·昆尼说他满意公司的现状。“我们正享受乐趣呢。”

READING PASSAGE 2

卡里尔夫人和石炭酸球

1892年1月14日，维多利亚女皇的孙子阿尔伯特·维克多王子，英国王位的第二继承人，死于流感。他死于第三波也是最致命的一波席卷全球的俄国流感。当时举国震惊，人们悲痛万分。这之后，阿尔伯特就沦为历史的注脚了。

三天后，伦敦主妇路易莎·卡里尔染上了流感。她十分惊恐。因为她坚持每天吸入三次石炭酸球烟已经整整两个月了，这是一种抵御流感的预防措施——如果你相信它的广告效用的话。她的确按照说明这样做了。她没有理由不这样做，因为当时石炭酸球生产公司承诺为每名患病的顾客补偿100英镑。和阿尔伯特不同，路易萨康复了，她索赔了她的100英镑，同时做出了一系列使她名垂史册的事。

这场流感始于1889年春天。流感的首批报告来自于俄国。到这一年的年底，全世界陷入了第一场真正意义上的全球流感大爆发。这场疾病是分拨侵袭全球的，接下来每四年爆发一次，每次都比上一次更为严重。

所有的城市都陷入了停滞状态，其中伦敦是受灾尤其严重的地区。每年流感达到顶峰时，日常生活都不得不停止。邮政服务暂时停止、火车停运、银行歇业，甚至法院也由于缺少法官而停止运行。在1892年的第三波流感中，仅伦敦一个公墓每天埋葬人数就高达200人。这场流感远比之前的流行性疾病更致命，那些康复的人们也变得虚弱、忧郁，再也无法工作。这就是多次席卷欧洲大陆流感的真实写照。

除了巴黎、比利时、维也纳以外，所有地区的患病及死亡数据都是不清楚的，报道称死亡人员不断增长。新闻报刊对这场灾难保持了强烈的关注，不仅仅是因为它的影响范围大，还因为患病的人员本身。大多数流行性疾病感染致死的是穷人、下等阶层、老年人和体质虚弱的人。这次流感则像收割机一样侵袭了上层社会，包括富人、名人、年轻人和身体健康的人。

老百姓每天都能从报纸上读到名人染病去世的消息。流感已经席卷了俄国帝王家庭，并侵袭了欧洲的皇家宫廷。德国皇太后、意大利国王的次子和英国未来的王储一样都死于这场流感。贵族和政治家、诗人和歌剧家、祭司和红衣主教——没有一个人能逃过这场俄国流感。

公众的恐惧日益剧增。媒体报道可能过于沮丧悲观了，但是他们的报道揭示了一个可怕的事实：医学界对这种疾病没有任何解答。甚至可能并不是始于俄国的这场流感是个谜。它的致病原因是什么？它是如何传播的？没有人能给出任何可靠的解答。

现在，认为这场疾病是由微生物导致的理论被大多数人所认同，但是没有人证实导致流感的是何种微生物（这种困惑一直持续到 1933 年）。除了微生物，过去人们一直把流感归咎于各种老原因：不新鲜的空气、瘴气，或是由一些物理外力所造成的——如地震、上层大气层的电现象、甚至是划过的彗星。

医生们建议民众保持良好的饮食习惯，避免“不必要的集会”，如果实在担心可以用棉制品遮住鼻子。对于患病的人来说，应该好好休息，保持温暖并食用营养丰富的“牛奶、鸡蛋和谷物布丁”。酒精在这些处方中占有重要的地位：英国一位著名的医生建议大家饮用香槟酒，当然他也承认“大量白兰地也有显著的好处”。法国医生给患者开出热酒精饮品的处方，并解释说他们从没见过喝酒的人得流感。他们的处方立刻产生了这样的结果：3 天之中，1500 名饮酒者中有 1200 名醉倒在巴黎街头，他们都声称这是遵照医嘱进行的。

一些医生用药物来减轻症状——用奎宁来治疗发烧，用水杨苷来治疗头痛，用吗啡来治疗某些“不间断的咳嗽”。但是这些药方中没有一种能够治愈疾病。这没什么可奇怪的，人们自然要从别的地方寻求帮助。为了在流行病持续期间取得收益，专利医药供应商为了争夺顾客打出越来越不负责任的广告。其中最成功的就是这家石炭酸球公司。

石炭酸球是一种中空的橡胶球，直径 5cm，附带一个被纱布包裹的小柄。里面是一种用碳酸或者石炭酸处理过的粉末。使用时将它靠近鼻子，轻轻挤压，深深地吸入里面喷出的刺激性气体。这家公司宣称，这种产品能够为黏膜消毒，消除任何“患感冒”的条件。1890 年的夏季，这种烟球每个月稳定售出 300 个。到了 1891 年 1 月，销售量激增到 1500 个。

石炭酸烟球公司迫切地想利用公众这种日益增长的痛苦，发出了越来越夸大其词的声明。1892 年 11 月 13 日，它在伦敦蓓尔美尔街公告上的最新广告吸引了伦敦南部的家庭主妇路易莎·卡里尔。广告这样说道，“石炭酸烟球将有效治愈”感冒、咳嗽、气喘、支气管炎、嘶哑、流行性感冒、喉头炎、百日咳……这项列表还远没有到头。但是卡里尔夫人接下来看到的更引人注目。“任何按照所附说明使用石炭酸烟球的顾客若染上正在流行的流行性感冒、风寒或任何由风寒导致的疾病，石炭酸烟球公司将向其支付 100 英镑的补偿。为了展示我们对这项承诺的严谨态度，我们已经在摄政街的联盟银行存入 1000 英镑。”

卡里尔夫人急忙去买了一个烟球，价格为 10 先令。在仔细读过说明书后，她每天都坚持使用 3 次直到 1 月 17 号——她患病的那一天。

1 月 20 日，路易莎的丈夫向石炭酸烟球公司写信。对这家公司而言，不幸的是卡里尔先生是一名法务员。他在信中写到，他的妻子看到了公司的广告，并在广告的驱使下买了一个烟球。她按照说明书进行使用，可是现在——正像那些医生确诊的那样——她患病了。

此后并没有回信。但是 100 英镑并不是一个可以忽视的数目。卡里尔先生坚持写信，而公司继续置之不理。路易莎恢复健康后提出了诉讼。6 月，卡里尔夫人遇到了支持她意见的法官哈金斯先生。石炭酸烟球公司的主要辩词是，广告不过是一种“夸大”，只有傻瓜才会相信这种夸张的声明。哈金斯法官指出，广告的受众目标并不是明智和理性的人群，而是那些容易轻信别人和意志薄弱的人群。一个作出承诺的卖主“不必惊讶于他会偶尔被要求兑现诺言”。

石炭酸球公司提出了上诉。12 月，三位高院法官审理了这个案子。石炭酸球公司的律师们提出了几条抗辩理由。但是最终，这个案子以一项事实做出了判决：不管这个治疗产品有没有用，也不管石炭酸球公司是否有真正的欺诈行为，只看这份广告是否包含公司未遵守的协定。石炭酸公司的律师们辩称，一份协定需要双方之间的确认。卡利尔夫人和公司做了什么协定呢？

法官裁决，在某些时候契约可以是单方的。这份广告已经向顾客做出了特殊的合约承诺：不会患上流感，否则赔偿 100 英镑。按照说明的要求使用了烟球产品，就意味着卡利尔夫人接受了这份合约。如果公司没有提到银行 1000 英镑的存款，或许还能勉强逃脱责罚。法官说，这份承诺给了购买者信任石炭酸球公司广告的理由。“我认为，如果一个人对我做出了类似的夸张承诺，他可能是因为能从中获利。同样，只要他做出了承诺，这份承诺的夸张程度并不是他不遵守承诺的法律依据。”高等法官鲍恩这样宣判到。

路易莎得到了她的 100 英镑。这个案子建立了单边合约的准则，在今日仍被频繁引用。

READING PASSAGE 3

交流的方式与冲突

知道你自己的交流方式同时在自己的团队中混合具备各种交流方式的人能够为解决冲突提供积极力量。

A 早在希波克拉底年代（公元前 460–370）人们就尝试通过不同的个性和性格为人们分类并理解他人。希波克拉底相信人体中有四种体液影响四种基本的性格。500 年后的伽林（公元 130–200）改进了这一发现。如今已有许多自我评估工具都涉及到伽林所改进的基本描述，尽管我们已不再认为是不同的体液影响我们的性格。

B 自我评测能够帮助确定个性类别、学习方式、交流方式、解决冲突的方式以及个人的其他方面，它的价值在于能够在发生人际关系冲突时去除冲突中人的因素。

当你意识到冲突中其他人并不是刻意刁难，与你相比，他们只是需要不同的或更多的信息时，你就能够去除其中人的因素。他们不是有意粗鲁无礼；他们只是太关注自己的工作而忘记向人们打招呼。他们愿意使工作进行地更快速，但是也不愿意冒风险破坏能使工作顺利进行的人际关系。他们明白工作必须完成，但是完成工作必须有正确的信息，虽然这需要时间来收集。

如果使用得当，了解交流方式能够解决团队之间的冲突。其实很少有冲突是真正的个性问题，通常它们只是方式、信息需求或重心的问题。

C 希波克拉底和之后的伽林认定有四种基本性格：多血质、黏液质、抑郁质和胆汁质。这些描述虽然数百年前就已经确定，但是今天仍然适用，尽管在措词上可能会有所变化。在当今世界，人们把这四种性格进一步确定为四种极为常见的交流方式，阐明如下：

D 多血质的人善于表达，交流时充满活力。这些人讲话形象生动。他们在交流中投入很多激情和能量，并且讲话飞快，使用全身的肢体进行表达。他们也很容易偏题讲到一个和自己话题毫不相关故事上。正是这种热情通常使他们成为非常好的团队激励者。他们关心他人以及人际关系。他们精力极其充沛，通常把重心放在大事上，但这也意味着他们时常忽略细节和做事的合理顺序。这些人对冲突和意见的不一致充满兴趣，也乐于参与积极的讨论。他们热爱改变，也经常寻找新鲜的刺激。

E 黏液质的人多冷静、有毅力，他们的交流方式是严谨的、有体系的。这种交流方式注重事实和技术细节。黏液质的人用一种系统的、讲究方法的方式来处理工作。他们的重心就是工作，不是人，不是情感，也不是该项工作可能涉及的种种关系。他们的重心还包括对于完成一项工作必要的细节。有时细节甚至会超过整体，这时重心就需要重新回到工作整体当中。具有这种交流方式的人认为应该让事实说话，并且他们不太喜欢冲突。他们需要时间来适应改变，也需要弄清楚其中的逻辑和相关步骤。

F 抑郁质的人通常心地善良、乐于助人，他们是体贴的、富有同情心的交流者。具有这种交流方式的人看重人和人际关系。他们是很好的倾听者，同时也乐意为别人服务——有时甚至影响到他们自己的事情。他们希望收集每个人的观点以确保每个人都能高兴地完成工作。有时他们过于关注他人可能会对手头工作分心。因为他们太考虑别人的需求、总想圆满地处理各种问题，所以他们不喜欢冲突。他们相信变化威胁现状并且容易使人不安，于是这种交流方式的人需要时间考虑改变以适应它们。

G 胆汁质性格的人意味着他们的交流方式大胆而直接。拥有这种方式的人交流简短——话越少越好。他们注重大局，并喜欢同时参与多项工作。他们强调工作和结果，并经常忘却参与这些工作的人也有自己的需求。他们不太善于细节工作，也通常因此低估完成工作所需的时间。因为他们太直接，他们也通常显得具有强迫气质而使人生畏。他们一般也欢迎他人挑战自己，但是大多数其他类型的人却不敢这么做。改变让他们更加优秀，对这类人来说，改变多多益善。

H 一个全面高效的团队应该具备以上所有交流类型。所有团队都应重视任务，同时处理好人际关系以确保任务完成。他们既要有全面的视角或把握工作的全局，同时也要照顾细节以保证成功。

我们每个人都有每种类型某一方面。有些人能自如地从一种类型切换到另一种类型来适应当前的状况——是否任务为核心还是人际关系为核心。另外一些人显然则是由某一种类型占据主导地位，对他们而言，从其他类型的视角来观察问题具有挑战性。

工作环境也能通过工作所需要的类型或该环境中体现出的主流交流方式来影响我们的交流方式。有些人在工作中是一种类型，而在家里却是另一种。

然而关于交流类型的好消息是我们都有能力培养自身交流方式的灵活性。我们在交流上越灵活，在处理可能的和实际中出现的冲突上就越有技巧。通常这都要和我们自身相关，因为要么我们认为这很重要，要么在我们的环境中有这样的刺激因素。关键就是我们必须想在交流方式上灵活。正如亨利·福特所说，“不论你认为你能还是不能，你都是正确的！”

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READING PASSAGE 1

新西兰海藻

不要叫我们野草，我们是海洋之花。

A 海藻是一种营养十分丰富的食物，它吸收并浓缩了大量人体健康所必需的微量矿物质。许多元素都在海藻中存在——例如，铝、钡、钙、氯、铜、碘、铁等——这些微量元素通常是由侵蚀作用产生，被河水和洋流带到底藻层。同时海藻还富含维他命：事实上，爱斯基摩人身体所需的大部分维生素 C 就是通过食用海藻获得的。

海藻丰富的营养价值很早之前就已经被人类所知了。例如，日本人甲状腺肿大的发病率特别低，新西兰当地的毛利人也是如此，因为他们都长期食用海藻，他们的食物中有着很高的碘含量。对过去毛利人饮食习惯的研究显示，他们的果酱是由海藻、新鲜水果、坚果、倒挂金钟果、芭蕾莓、灯笼果等混合制成的，这些水果可能是当地天然水果，也可能是殖民者和探险者带来种子并种植的。

B 新西兰已确认发现了大约 700 种海藻，其中有一些种类只生长在新西兰水域。在全世界的海藻种类中，新西兰所拥有的种类占有相当大的份额。举例来说，据估计，仅杉藻——鹿角藻或爱尔兰藓的一种近亲——新西兰就有大约 30 种。该藻类被统称为新西兰鹿角藻。从这种海藻中可以提炼出一种被称为琼脂的胶状物质，这种海洋物质具有极大的经济价值，可以用于制作奶油蛋糕、咳嗽糖浆、糖果、化妆品、罐头制品、涂料、皮革产品、复印机胶以及牙膏。事实上，在第二次世界大战中，新西兰杉藻就被运送到澳大利亚用于制造牙膏。

C 新西兰拥有大量极具经济价值的红海藻，它们中的某些种类可以提炼出琼脂（如鸡毛藻、石花菜、角叉菜、杉藻）。尽管如此，在 1940 年以前人们对其使用价值的开发却是少之甚少。过去，新西兰从英国引进北半球爱尔兰藻（皱波角叉菜），并从日

本进口成品琼脂。杉藻的种群分布被限定在特定的区域内，它非常稀有，只生长在爱尔兰北岛的东岸沿线。但是，在东海岸和霍奇安格纳沿岸，则大量生长着两种鸡毛藻，它们也是生产琼胶的可用材料。让人高兴的是，新西兰产琼胶现在已经可以在健康食品专卖店买到了。

D 海藻按颜色被分为三个大类——红藻、棕藻和绿藻——每一种都生长在特定的区域。但是除了不会被认错的海莴苣（轮藻）之外，几乎没有一棵完全是一个颜色的；特别是当它风干时，有些种类还会明显地变色——棕色海藻可能会变为全黑色，红色海藻可能变为黑色、棕色、粉色或者紫红色。

海藻种类的鉴别仍然是根据其确切的生长地区来进行的，因为它们趋向生长在设定好的区域内。虽然也有例外，但是大部分的绿藻都是浅水藻；棕藻则生长在中等深度海域；红藻则是深水植物。中层潮汐附近平坦的岩石表面，是“海炸弹”、“维纳斯项链”和大部分棕藻最常见的栖息地。这里也是紫紫菜和毛利紫菜的生长地，这两种藻类看上去就像红紫相见的莴苣。开放海岸的深水岩石只能接触到底层潮汐，这里通常生长着巨藻、海带和类似的坚韧藻类。那些可以忍受长期日晒和氧气的藻类通常生长在上层水域，相反那些不太能暴露在阳光和氧气中的藻类则生长在低层水域或者底层附近的地方。阳光辐射、温度水平以及水中浸泡时间都是藻类划分的依据。

E 海藻通过孢子或卵细胞受精的方式进行繁殖。一般来说，海藻没有根系；很少有叶子，也不能开花、结果或播种。这种植物在水中时通过藻体来吸收所需的营养物质：海藻的底部或者说“固定器”只是单纯起固定作用的器官，并不具有吸收养分的功能。

F 一些大型海藻体内是充满空气的，因此具有浮力；其他藻类例如巨藻，则具有大量的充气细胞。那些长时间暴露在阳光中的海藻常常长有粗壮的茎干，用来储存水分从而减少脱水现象，或者长有肿节（像“维纳斯项链”），或者具有特殊的体型（像“深水炸弹”）。其他的如海仙人掌，则在表层附着黏稠的液体，或是有一层黏液外衣。对某些更为大型的海藻来说，这种外衣不仅仅能保持湿度，还能保护它们免受海浪的侵袭。

READING PASSAGE 2

乐观与健康

心态决定一切。一年的开始决定了你整年的状态，这里有两个关键的性格特征：乐观和恢复能力（在你面临悲观无助的前景时，你会发现它好的一面，它会大大地锻炼和提高你的乐观心态和抗压能力。）

在连续 12 个月的经济衰退和贫穷人口增加的困境下，仍然持有看好未来的观点似乎有点盲目乐观。但是，本文讨论的是乐观主义本身。就像伦敦皇家学院老年精神病学的荣誉退休教授布莱斯·皮特告诉我的那样，“乐观主义者往往是不现实的。悲观主义者则常常看到事物的实际情况，但是从人类进化的角度来看这是不利的。乐观是人类数千年来克服各种灾难的进化武器之一。”

乐观主义者有很多值得高兴的事。换句话说，当你说服自己事情会越来越好时，好事情发生的几率就会增加——因为你会坚持继续做下去。《学会乐观》一书的作者、心理学教授马丁·塞里格曼认为乐观“是一种向自己解释挫折原因的习惯性行为”。研究表明，倒霉的时候乐观主义者的表现比悲观主义者要好——他们在工作中更成功，对压力的反应更积极，产生的压抑感更少，能够完成更多的个人目标。

研究还发现，心态能够有效减轻经济拮据感。亨利中心的社会观测员查德·瓦伦斯研究了英国中产阶层的收入理念，他发现“那些觉得自己富有和觉得自己贫穷的人财产实际上是一样的。只是他们的态度和生活习惯各不相同。”

乐观主义者通常认为生活是值得高兴的，他们更坚强。举例来说，耶鲁大学的心理学家贝卡·李维博士曾经面向 660 名志愿者做过一项研究，他发现积极的心态会使寿命平均延长 7 年。另一份来自美国的研究声称，他们已经发现了其中的心理机制。哈佛医学院一份针对 670 名男性的研究发现，乐观主义者的肺功能明显好于常人。报告的第一作者罗莎琳德·怀特博士认为，态度在某种程度上增强了免疫系统功能。她称：“针对心脏病患者的初步研究发现，可以通过改变病人的心态来降低其死亡风险。”

很少有研究去查明世界上乐观主义者的比例是多少。但是 1995 年一份由美国杂志《广告周刊》进行的网络调查发现，大约一半的人认为自己是乐观主义者，同时女性比男性更容易看到事物积极的一面（53% 比 48%）。

当然，乐观主义并不能保证你能远离糟糕的事，但是一旦遇到困难，最佳应对方式仍然是保持微笑，并感谢你的幸运之神。因为逆境促进性格的形成（这点为优秀体育教练所共知）——这样你才能锻炼你的恢复能力。针对企业家和商业领袖的研究表明，成功之路往往是由无数失败组成的：简陋的服装、濒临破产以及恶毒的批评。但是他们并没有在咖啡桌前蜷缩成一团，而是充满活力地振作自己，从摔倒的地方吸取教训，勇敢地向下一个机会进军。

美国心理学会定义恢复能力为一种适应灾难、创伤和悲剧事件的能力。一个坚强的人可能会遇到困难和突发事件，但是他或她会顽强地站立起来。

耶鲁大学的研究员在《临床心理学年鉴》中指出，乐观主义是培养恢复能力不可或缺的一种核心特征。他们还指出，恢复力强的人能够保持幽默感，这使他们能对计划的重大改变保持灵活态度。文章还指出，这种使人保持平静的能力往往扮演着重要的角色。

心理学家史蒂文·斯塔克在《社会心理学》期刊上发表文章指出，培养恢复力最有效的方式是从儿童时期的艰难经历中得到磨练。例如，矮个子的人的自杀倾向要比高个子的人低，因为矮个子的人由于身高的缺陷会经受欺负和嘲笑，在这一过程中他们发展了心理防御技巧。相反，那些没有经历挫折的年轻人们则容易在日后的困境中做出过激行为，因为他们对挫折没有任何心理准备。

如果你的童年一帆风顺，恢复力未能得到培养，那么就锻炼你的主动乐观性吧，这将有助于你变得更有恢复能力。研究表明，恢复力强的人更具有冒险精神，他们乐于失败，无惧失败。

尽管恢复力强的人有点厚脸皮，但是他们比一般人更开放。笑对挫折已成了家常便饭。正是这种冒险主义式的乐观和自信使他们相信人们会喜欢自己。他们会单纯地微笑，并热心帮助别人。这是一种利他且利己的行为，即使有时并没有获得回报。正如那句古老的谚语所言：艰苦的生活最终会令你闪光。

READING PASSAGE 3

哥伦比亚大交换

A 数百万年前，板块漂移使得旧世界和新世界分离开来，南北美洲从欧亚大陆和非洲板块中分离出来。这一分离持续的时间极其长久，以至于在这些板块上发生了各自迥异的物种进化：例如，大西洋一岸生长着响尾蛇，另一岸则生长着毒蛇。1492 年后，部分人类航海者的介入扭转了这一趋势。得益于他们的介入，新旧世界之间的联系（如植物、动物以及病菌）被重新建立，这被人们称为哥伦比亚大交换，这也是人类过去一千年中规模壮观、意义重大的生态事件之一。

B 当欧洲人第一次抵达大西洋沿岸时，旧世界的农作物例如小麦、大麦、水稻和甘蓝还从未跨越过大西洋，新世界的农作物例如玉米、白薯、甜薯和木薯也没有向东到达过欧洲。在美洲，没有马、牛、绵羊或山羊之类起源于旧世界的动物。除了美洲驼、羊驼、狗、一些家禽和豚鼠之外，新世界的土地上没有任何其他驯化动物，没有存在于旧世界稠密人群中的病原体，同时也没有和病原体相关的生物，如鸡禽、牛、黑老鼠、以及伊蚊属昆虫。这些生物则是病菌的携带者，如天花、麻疹、水痘、流行性感冒、疟疾和黄热病。

C 就像文中所预期的那样，欧洲人定居在美国东海岸后开始耕种小麦和苹果之类的作物，这些作物都是他们带过来的。殖民者不会种植欧洲的野草，反而会将它们连根拔除，但是这些野草在新世界也同样茁壮成长。英国业余博物学家约翰·约瑟琳曾于 17 世纪两度前往新英格兰，并给我们留下了这样一份清单，“自英国人在新英格兰种植植物以及喂养家畜后所出现的植物清单”，这包括茅草、蒲公英、荠菜、千里光属杂草、苣苦菜和繁缕草等。其中一种车前草（车前草属）被新英格兰和弗吉尼亚的印第安人称为“英国人的脚印”，他们认为这种植物只会生长在英国人走过的地方，在英国人进入这片国土之前他们从未见过这种草。“就这样，当他们有意识地播种旧世界的作物时，这些欧洲殖民者也在无意之间用这些草种污染了美洲土地。更要命的是，他们砍伐焚烧了大片森林，将当地次生的植物种群直接暴露在日晒和旧世界家禽的爪牙之下。当地植物无法忍受这种压力，但是那些引进的植物可以，因为它们已经和大群拥挤的动物生活数千年了。”

D 牛和马早在 17 世纪就已经被带上了北美大陆，并且在此寻觅到了适宜生存的气候和地形。马匹于 1620 年引入弗吉尼亚，于 1629 年引入马萨诸塞。马群在这片土地上驰骋飞奔，除了它们跃过篱笆去寻找作物时在屁股上留下的挂钩外，再没有任何和

人类相关的东西了。篱笆不是用来圈养这些家禽的，而是用来防止它们入侵的。

E 美洲本土居民对欧洲人一直做着无用的抵抗。土著人民忍受着白种人的残暴、酗酒、杀戮和驱赶猎物以及对农田的征收，但是这些加在一起都不足以解释他们挫败的程度。最重要的因素不是人类、植物或动物，而是细菌。天花是席卷美洲本土最严重的、耸人听闻的传染病。第一次有记录的全国性天花传染发生在 17 世纪 30 年代早期的英属北美洲，在马萨诸塞的阿耳冈昆人中爆发。普利茅斯殖民地的威廉·布雷福德写到："这场疾病中倒下的患病者如此之多，以至于最后没有一个能照顾病人的健康人，没人能去点火、取水，没人能去埋葬死者。"曾冒险进入美洲内部的传教士和商人也讲述了同样可怕的天花病情和土著人的境况。1738 年，这场传染病夺走了一半北美彻罗基族印第安人的生命；1759 年近一半卡托巴族印第安人得病致死；接下来一个世纪的最初几年中，三分之二的奥马哈族印第安人以及密苏里河和新墨西哥之间的地区的一半人口都死于这种疾病；1837–1838 年，曼丹族印第安人的最后一个人以及这片高原上几乎一半人都因此丧命。

F 美洲本土动物的输出并不像欧洲动物引入到新世界那样，它们对旧世界的农业或生态环境并未产生革命性的影响。美洲的灰松鼠和麝鼠以及其他几种已经在大西洋东岸和太平洋西岸生活的动物并没有给当地带来什么变化。一些美洲特产动物被带到旧世界，但是它们并没有取代鸡和鹅；豚鼠被证明在实验室中极其有用，但也没有取代那些小老鼠。

G 新世界对旧世界最大的贡献是农作物。玉米、白薯、甜薯、各种南瓜、红蕃椒、木薯，已经成为数百万欧洲、非洲、亚洲人的重要食物。它们对旧世界人们的影响不亚于小麦和水稻对新世界人们的影响，这能进一步解释过去三个世纪的全球人口爆炸。哥伦比亚大交换是人口爆炸中一个不可忽视的因素。

H 所有的这些交换都与绝对意义上的生物系统优劣无关，而是与环境对比相关。印第安人习惯生活在某种特定环境中，欧洲人和非洲人则习惯在另外某种环境中生存。当旧世界的人到达美洲时，他们带来所有的植物、动物以及病菌创造出了他们已经适应的生活环境，从而他们的人口数量得以增长。印第安人并不适应欧洲病菌，因此他们的人口数量先是有所下降。当今时代，随着印第安人口对旧世界环境影响的适应，这种下降已经开始反转，但是旧世界入侵新世界的典型标志——侵略者的人口占优——现在仍然存在。

Answer Keys

Test 1

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 v
2 i
3 vi
4 x
5 ix
6 iv
7 ii
8 True
9 True
10 Not Given
11-13 in any order
C
D
E

Reading Passage 2

14 Yes
15 Yes
16 No
17 Not Given
18 Yes
19 Not Given
20 1976, 1995
21 2000 flood(s)/flooding
22 1998 and 2002
23 1990
24 1856
25 France
26 D

Reading Passage 3

27 B
28 C
29 H
30 G
31 E
32 D
33 A
34 beekeeping (notes)
35 life cycle(s)
36 drought(s)
37 C
38 D
39 A
40 D

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will *find different* scores acceptable.

Test 2

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 Yes
2 Yes
3 Not Given
4 No
5 Yes
6 C
7 D
8 B
9 D
10 A
11 B
12 C
13 A

Reading Passage 2

14 C
15 A
16 B
17 F
18 D
19 B
20 F
21 D
22 A
23 Yes
24 No
25 Not Given
26 Not Given

Reading Passage 3

27 iv
28 xii
29 ii
30 x
31 i
32 ix
33 v
34 vii
35 C
36 B
37 A
38 Yuri Larin
39 colour-coding/colour
40 family

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

Test 3

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 D
2 A
3 C
4 E
5 False
6 True
7 True
8 False
9 less
10 social
11 watched
12 observer
13 Nutcracker

Reading Passage 2

14 B
15 A
16 D
17 A
18 B
19 D
20 A
21 B
22 C
23 heat
24 denser
25 Great Ocean Conveyor
26 fresh water

Reading Passage 3

27 D
28 A
29 C
30 B
31 E
32 I
33-34 in any order
Fruit
Fiber
35 uxi
36 unpredictable
37 piquia
38 subsistence
39 commercial potential
40 NTPPs/non-timber plant products

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

Test 4

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 D
2 G
3 B
4 A
5 F
6 short
7 complex
8 rats
9 True
10 False
11 False
12 Not Given
13 True

Reading Passage 2

14 C
15 F
16 A
17 D
18 E
19 True
20 False
21 False
22 True
23 True
24 False
25 True
26 False

Reading Passage 3

27 iii
28 vii
29 iv
30 i
31 viii
32 F
33 B
34 E
35 D
36 G
37 A
38 C
39 C
40 C

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

Test 5

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 E
2 D
3 B
4 A
5 D
6 C
7 B
8 A
9 B
10 B
11 D
12 soil erosion
13 paper

Reading Passage 2

14 stories
15 America
16 folklore
17 fairy-tales
18 adventures
19 C
20 A
21 E
22 False
23 True
24 Not Given
25 True
26 True

Reading Passage 3

27 B
28 A
29 B
30 A
31 C
32 B
33 20
34 foam
35 waste water
36 harmful
37 biodegrade
38 droplet(s)
39 lamination, packing
40 grape grower(s)

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

Test 6

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 F
2 E
3 C
4 B
5 G
6 D
7 A
8 C
9 A
10 D
11 B
12 B
13 D

Reading Passage 2

14 Not Given
15 False
16 True
17 Not Given
18 gauze
19 nozzle
20 powder
21 rubber (ball)
22 C
23 A
24 D
25 F
26 B

Reading Passage 3

27 iii
28 vii
29 i
30 iv
31 ix
32 viii
33 v
34 ii
35 False
36 True
37 Not Given
38 True
39 True
40 B

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

Test 7

Each question correctly answered scores 1 mark. **CORRECT SPELLING IS NEEDED IN ALL ANSWERS.**

Reading Passage 1

1 v
2 ii
3 viii
4 i
5 x
6 vi
7 New Zealand carrageens
8 agar
9 seameal
10 cough mixture
11 A
12 C
13 B

Reading Passage 2

14 7 / seven
15 lung function(s)
16 immune system / immunity
17 heart patients
18 C
19 A
20 E
21 H
22 D
23 Not Given
24 Not Given
25 No
26 Yes

Reading Passage 3

27 C
28 G
29 A
30 E
31 B
32 F
33 H
34 D
35 False
36 True
37 False
38 True
39 missionaries and traders
40 demographic triumph

If you score...

0-12	13-26	27-40
you are highly unlikely to get an acceptable score under examination conditions and we recommend that you spend a lot of time improving your English before you take IELTS.	you may get an acceptable score under examination conditions but we recommend that you think about having more practice or lessons before you take IELTS.	you are likely to get an acceptable score under examination conditions but remember that different institutions will find different scores acceptable.

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