

Reference Book

Unit 1 Company

Part I More information for the unit

The influence of biotechnology will grow constantly in the years to come — not only in biomedicine and plant research, but also in the industrial sector. Biotechnology is seen as key to addressing such concerns as dwindling raw materials and energy shortages. It is hoped that highly developed techniques will enable the development of more environmentally sound and efficient procedures in many areas of industrial production in chemistry, pharmacy and agriculture, and can thus make a contribution to a sustainable economy.

Alongside, the experts also believe that the development of a whole set of new products will only be possible with the use of biotechnological methods. On the basis of today's figures, the experts predict that in 2030 the worldwide turnover of industrial biotechnology will be in the region of 300 billion euros, which corresponds to a third of the predicted total industrial production.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. Since its birth Amgen has served as a business model in the pharmaceutical industry, which is mainly composed of three parts: General Meetings of Stockholders, Board of Directors and Chief Executive Officer. (Para.1)

Explanation: 此句带有 which 引导的非限制性定语从句。Amgen has served as a business model in the pharmaceutical industry 是主句，从句用 which 引导，用来诠释 Amgen 公司的组织结构，主从句之间用逗号隔开；Be composed of 表示“构成，组成”。此句的中文意思是：安进公司成立以来，一直是生物制药领域的商业楷模，其公司结构主要由股东大会、董事会和首席执行官三个部分构成。

2. The committee made up of members of the Board ensures that

compensation and management programs are designed to encourage high performance, promote accountability and adherence to company values.
(Para.5)

Explanation: made up by the members of the Board...是过去分词短语做后置定语，修饰 the committee; ensure 后接以 that 引导的宾语从句，时态为一般现在时，表示该委员会的具体责任。此句的中文意思是：该委员会由董事会成员组成，确保奖励计划能够鼓励员工实现高绩效，提高责任感及对公司价值观的认同。

3. The Committee keeps a watch at Amgen's activities in the area of compliance that may impact the Company's public image, in light of applicable government and industry standards, as well as business trends and public policy issues.
(Para.6)

Explanation: Compliance 是“遵循”的意思；后接以 that 引导的定语从句，表明该委员会的监督遵守范围涉及公司的公众形象。that 所代替的先行词是 activities 并在从句中做主语。此句的意思是：该委员会监督公司活动是否遵守相关适用的政府和工业标准，服从商业趋势和公众政策，这些方面都可能影响公司的公众形象。

4. Amgen's business units are located in the UK and Ireland, whose major tasks are sales and marketing. (Para.10)

Explanation: whose major tasks are sales and marketing 作非限制性定语从句，修饰 Amgen's business units，用来阐释安进公司业务部门的主要任务。此句的意思是：安进公司的业务分部设在英国和爱尔兰，主要任务是销售和营销。

Passage 2

1. From the beginning Starbucks set out to be a different kind of company as

it not only celebrated coffee and the rich tradition, but that also brought a feeling of connection.

Explanation: 这个句子比较复杂，as 引导的是原因状语从句，主句为 Starbucks set out to be a different kind of company，开头的 from the beginning 为时间状语。而在 as 引导的原因状语从句中，又包含了 not only...but also...的并列句。此句的中文意思是：星巴克创始之初便立志与众不同，因为它所推崇的不止是咖啡及其饮用传统，更是一种人与人之间的情感联络。

2. If there is one thing that everybody who studies Starbucks agrees on, it's that the company spares great efforts on the way it provides employees with a great place to work.

Explanation: 这个句子比较复杂，第一个条件分句里含有 who 引导的定语从句，先行词为 everybody，接下来的主句 it's that...里 that 引导的是表语从句。为了便于理解句子含义，整个句子可以改写为“those who study Starbucks agree on one thing. i.e. the company tries very hard to make the working environment great for employees. 此句的中文意思是：有一点是所有研究星巴克的人都认同的，那就是星巴克不遗余力地给其员工营造极佳的工作环境。

Part III Examples with some of the key words and expressions

Passage 1

1. flagship n. 旗舰；〈比喻〉最重要的一个；佼佼者
e.g. For decades, the television was the flagship of any consumer-electronics product line-up.

几十年来，电视机一直是消费类电子产品中的旗舰产品。

The company is opening a new flagship store in London.

这家公司将在伦敦新开一家旗舰店。

2. serve as 充当，担任

e.g. Do you think parents can serve as a good example for kids?

你是否觉得父母可以做孩子的好榜样？

He volunteered to serve as the manager of our department store.

他自荐当我们商场的经理。

3. hand out 拿出；分发

e.g. At the beginning he would always hand out an outline of the lecture.

在演讲开始时，他总是先分发一份提纲。

The restaurant has girls hand out prospectus in the street.

餐厅请姑娘们在街上散发宣传材料。

4. be designed to 目的是；计划做，旨在
e.g. The tests are designed to detect the disease early. 这些检查旨在早期查出疾病。
These backpacks are designed to carry a heavy load.
这些背包是为携带重物设计的。
5. in light of 按照，根据
e.g. In the light of his remarks, we rejected her offer.
鉴于他的评语，我们拒绝了她的提议
We must ascertain responsibility in light of different situations.
我们必须根据不同情况判定责任。
6. implement v. 实施，执行
e.g. The government has agreed to implement the recommendation in the report.
政府已同意实施报告中的建议
China has pushed for a diplomatic solution, resisting US efforts to implement sanctions only.
中国提议通过外交途径解决，反对美国只实施制裁的做法。
7. specialize v. 专门从事；详细说明
e.g. Many students specialize in engineering.
许多学生专攻工程学
The shop specializes in chocolates.
这个商店专售巧克力。
8. be dedicated to 致力于，奉献于
e.g. China will continue to be dedicated to international cooperation in this area.
中国将继续致力于加强在该领域的国际合作
9. predicable a. 可预见的；可预言的；可预报的
e.g. Senior citizens long for a more predictable and secure future.
老年公民渴望有一个更可预见的安全未来。
The ending of the book was entirely predictable.
那本书的结局是完全可以预见的。

Passage 2

1. on average 平均
e.g. But on average they're not worth it.
但一般来说它们不值那么多。
Minimum wages here are on average a third lower than in Shenzhen.
这里的最低工资一般要比深圳低三分之一。
2. ownership n. 物主身份；所有权
e.g. Both of the husband and wife enjoy individual ownership of their

respective possessions.

丈夫和妻子都对各自的私密空间享有个人所有权。

As a creator of a work, you keep your ownership while allowing people to copy and distribute your work.

作为一个作品的创建者，在持有所有权的同时，您允许别人复制和转载您的作品。

3. franchise n. 特许权；经销权

e.g. Catering in this company is run on a franchise basis.

该公司的餐饮服务以特许权经营。

This country granted the franchise to women in 1920.

该国于 1920 年给妇女以参政权。

4. standard n. 标准；规范

e.g. The Dancing Club was unable to meet this standard

舞蹈俱乐部难以满足这一标准。

You have to try harder to meet our standard.

要达到我们的标准你得更加努力。

5. spare great efforts 努力

e.g. Whatever the result is, I must spare great efforts anyway.

不管结果如何，我都得付出努力。

People should spare great efforts to acquire more capabilities.

人们应该努力获取更多的本事。

6. perspective n. 观点，看法；远景，景色；洞察力

e.g. It helps to put their personal problems into perspective.

这有助于正确看待他们的个人问题。

He says the death of his father 18 months ago has given him a new perspective on life.

他说 18 个月前父亲的去世让他对人生有了新的认识。

Part IV Key to exercises and scripts for listening

Task 5:

1. I should try to use the limited amount of time for learning more about the employer's needs and discussing the ways I can meet these needs.
2. I should do research on the targeted company and make a re-assessment

of my résumé.

3. I can ask for some printed materials from the employer; use the library and career center resources, and visit the company's home page.
4. I should give only a general answer.
5. I need to supplement my answers with examples that support the statements I make in the interview.

Task 6:

1. have trouble
2. educational background
3. had an internship
4. checks
5. is regarded as

Task 7:

1. pharmaceutical industry
2. The Board of Directors
3. financial accounting and reporting
4. business advisors
5. drug therapies
6. therapeutic areas

Task 8:

1. Amgen Inc. was originally founded in Thousand Oaks, California in 1980.
2. Amgen's corporate structure is mainly of three parts: General Meetings of Stockholders, Board of Directors and Chief Executive Officer.
3. To oversee the activities of Amgen, select the company's management, in particular the Chief Executive Officer and hand out business proposals to stockholders.
4. Amgen's HR Department aims at helping the company achieve its success through working with individual staff members.
5. Their major tasks are sales and marketing.

Task 9:

1. handing out business proposals
2. promoting accountability and adherence to company values
3. formulating the organization's mission
4. implementing strategic plans that guide the direction of business
5. Training & Development
6. Procurement

Task 10:

1. 安进公司每年营业收入达到 190 亿美元，在全球拥有 2 万多员工，是世界上最大的跨国生物制药公司，市值约 770 亿。
2. 这给股东们提供了一次机会去审查前一年财政信息，并对公司未来的业务方向提出相关问题。
3. 财务部人员包括有资质的会计师、商业分析师和采购专员。 他们为安进公司提供财务、商业和分析支持。
4. 临床医学部负责安进公司的药物研发和治疗领域。
6. 安进公司的领导者致力于应用高标准的产品、服务和沟通。

Task 11:

1. company
2. retailer
3. brand
4. advertising
5. partner

Task 12:

1. 咖啡屋连锁店 / global chain
2. 竞争对手 / cooperative partner
3. 惊人的增长 / rapid expansion
4. 零售商 / wholesaler
5. 自营的 / franchise
6. 成熟市场 / potential markets
7. 人际交往 / social communication

Task 13:

1. digital marketing
2. revenue

3. biological products
4. western management
5. return of investment

Task 14: (Open)

Scripts for Task 5:

The interview is one of the most important elements of the job search process. You should use the limited amount of time you have to learn about an employer's needs and discuss the ways you can meet these needs.

Initial preparation requires research on the targeted company and a re-assessment of one's résumé. There are many ways to do this. You can request printed materials from the employer, such as annual reports and job descriptions; use your library and career center resources, and look at the organization's home page.

You will make the interview process easier for the employer if you volunteer to provide relevant information about yourself. Be prepared to supplement all your answers with examples that support the statements you make. If the interviewer asks about your salary expectations, give only a general answer.

Scripts for Task 6:

Interviewer: Good morning, please have a seat.

Interviewee: Thank you.

Interviewer: Did you have trouble in finding the way to our office?

Interviewee: I had no trouble at all getting here.

Interviewer: Fine. Well let's get started. Could you tell me about your educational background?

Interviewee: Yes, of course. I'm graduating from Beijing Polytechnic, majoring in Food Safety and Inspection.

Interviewer: What are the qualifications you've got?

Interviewee: I've got the intermediate food safety inspector certificate and passed PRETCO (Level A) Test.

Interviewer: I see. Now, how about your work experience?

Interviewee: I had an internship at Food Inspection and Testing Center of Nestle in the last year of my college life. My job involved recording and collecting test results after the inspectors finished their checks.

Interviewer: Great! So why do you want to work with our company?

Interviewee: Nestle is regarded as an innovator in the industry and beyond. I am expecting that your company is the right place where I can enhance my career and acquire new technical skills as well.

Interviewer: Thank you very much. We will contact you in five days if you are recruited.

Interviewee: Thank you for interviewing me.

Part V Chinese translation of passages

Passage 1

安进公司的组织结构

安进公司于 1980 年成立,公司最初选址在美国加利福尼亚州的千橡市。如今,安进公司每年营业收入达到 190 亿美元,在全球拥有 2 万多名员工,是世界上最大的跨国生物制药公司,市值约 770 亿美元。Aranesp 和 Neulasta 是该公司的旗舰产品,用于治疗慢性肾病和癌症化疗引发的失忆症。安进公司成立以来,一直是生物制药领域的商业楷模,其公司结构主要由股东大会、董事会和首席执行官三个部分构成。

股东大会

安进公司的股东大会每年举行一次,选举产生董事会成员。这是股东们审查过去一年的金融资讯并对公司未来的经营方向提出问题的时机。

董事会

董事会成员包括董事长和独立董事,他们共同监管安进公司的经营活动、选公司的管理层,尤其是总经理并且向股东递交商务议案。董事会下设三个委员会,它们是:

审计委员会

审计委员会协助董事会履行监督职能,职能范围涉及公司财务会计和报告、基本内部控制及程序和财务报表的审计。

奖酬及管理发展委员会

该委员会由董事会成员组成,确保奖酬计划能够鼓励员工实现高绩效,提高责任感及对公司价值观的认同。

企业责任维护委员会

该委员会监督公司活动是否遵守相关适用的政府和工业标准,服从商业趋势和公众政策,这些方面都可能影响公司的公众形象。

总经理

总经理负责管理安进公司所有的部门，如人力资源部、财务部、业务分部和开发运作部。他的责任包括制定机构任务、评估其他管理层人员的表现，以及实施引领公司业务发展方向战略决策。

人力资源部

安进公司的人力资源部的专业人才起商务顾问的作用，在员工配置、培训和发展方面提供专业建议，旨在通过和公司各个员工的亲密合作，帮助公司实现其业务目标。

财务部

安进财务部专辖四个领域：财务和会计、采购、商务经营和商业信息。财务部人员包括有资质的会计师、商业分析师和采购专家。财务团队为安进有限公司提供财务、商业和分析支持。

业务分部

安进公司的业务分部设在英国和爱尔兰，主要任务是销售和营销。肾脏、肿瘤和骨科研究分部向英国免费医疗系统和私人健康医疗系统的医院病人提供药物治疗。

临床医药研发部

临床医药研发部负责安进公司的药物研发的所有研制阶段和药方领域，该部门下设临床研究服务团队、本地研发管理小组和一名培训专家。

如今，安进公司的领导者们致力于应用高标准的产品、服务和沟通。可以预测的是，高效的公司结构将进一步促进安进公司的经济增长。

Passage 2

星巴克--最大的咖啡屋连锁公司

星巴克是一家美国全球咖啡公司和咖啡屋连锁店，总部位于华盛顿州西雅图市。根据 Loxcel Geomatics 最新统计，星巴克现已领先于英国的对手咖世家咖啡公司，在全球 63 个国家和领地共拥有 21,497 家分店，居世界第一位。星巴克创始之初便立志与众不同，因为它所推崇的不止是咖啡及其饮用传统，更是一种人与人之间的情感连络。

诞生和发展

第一家星巴克是由 3 个伙伴 Jerry Baldwin, Zev Siegel 和 Gordon Bowker 与 1971 年 3 月 30 日在华盛顿州西雅图市合作开办。1982 年，星巴克的董事长、总裁和星巴克飞速惊人发展的智囊 Howard Schultz 成为星巴克营销团队的一员。星巴克从其 1971 年开办成为咖啡豆烘焙和零售商开始，就得到了迅速的发展。从 1987 年至 2007 年，星巴克每天平均有两家新店开张。星巴克的名字起源系受到美国经典海洋捕鲸小说《白鲸》中一位大副的名字的很多启发。

品牌建设

星巴克打造全球连锁点和全球品牌的方式十分独特，使其更加引人入胜：与另一家有名的特许经营连锁店麦当劳不同，星巴克通过公司直营拥有所有权，而且，传统营销广告投入很大。星巴克则独辟蹊径，品牌有资产支撑而无需广告宣传。星巴克的一个最好的做法就是把其成熟市场的最佳咖啡大师派往新开市场去培训新员工。这些咖啡大师就作为品牌大使在新开店铺传播和建立星巴克咖啡文化，并确保当地的每家咖啡店的服务都达到其全球标准。

星巴克的合伙人

有一点是所有研究星巴克的人都认同的，那就是星巴克不遗余力地给其员工营造极佳的工作环境。员工在星巴克被称作“伙伴”，他们被看作是星巴克的最宝贵财富。为顾客提供上好的饮品不再被简单看作一种工作，更真真实实地关系到人们之间的联络和热情。所有“伙伴”之间相敬如宾，恪守礼仪标准。每位伙伴的才智、经验和观点在星巴克都备受珍视，这也更昭示了星巴克的美好未来！

Unit 2 Green Office

Part I More information for the unit

Natural Air Purifier in the Working Place

Overdressed modern office buildings are usually associated with various harmful chemicals. Environmental pollution in the office makes people easy to feel tired, dizzy and respond slowly, lose appetite and so on.

Common indoor plants are proved to be a valuable weapon in the fight against rising levels of indoor air pollution. Those plants in your office are not only pretty, but NASA scientists are finding them to be surprisingly useful in absorbing possible harmful gases and cleaning the air inside modern buildings.

NASA once announced the finds of a 2-year study, suggesting that the common indoor plants might provide a natural way of helping fight against “Sick Building Syndrome (综合征)”. Based on preliminary evaluations (初步评估) of the use of common indoor plants for indoor air purification (净化), NASA funded another study using about a dozen popular varieties of attractive plants to determine their effectiveness in removing several key pollutants linked with indoor air pollution. NASA research on indoor pollution found that living plants were so efficient at absorbing pollutants in the air that some would be launched into space as part of the biological life support system aboard future orbiting space stations. They believed that combining nature with technology could increase the effectiveness of plants in removing air pollutants.

NASA research has always tried to show that living, green and flowering plants can remove several poisonous chemicals from the air inside buildings. You can use plants in your office to improve the quality of the air and to make it a more pleasant place to work in—where people feel better and perform better.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. With the development of computers and the internet, the file cabinets full of paper are unnecessary at the office. 这句话的主要结构是由 be 动词构成的系表结构 “The file cabinets are unnecessary at the office.” 句中, with (随着, 由于) 介词短语做伴随状语, “full of paper” 是形容词短语, 后置做 cabinet 的定语。此句的中文意思是 “随着电脑

和网络的发展，装满纸张文件的橱柜不再是办公室里的必需品。”

2. In a word, any means for minimizing your office-related transportation not only saves your money and time but also contributes to saving our planet. 此句的“not only...but also (不但……而且)”用来引导并列谓语“not only saves...but also contributes (不但省钱而且对有……贡献)”。主语是“any means 任何手段”，for minimizing your office-related transportation 是“any means”的定语。此句的中文意思是“总之，尽量减少与办公室有关的出行的方法不仅省钱省时，也会有利于拯救我们的星球。”
3. To stop the power drain, there are several things you can do at work. 这句话的主干部分是“there are several things”。“To stop the power drain”放在句前作目的状语。而“you can do at work”是省略了“that”的定语从句，修饰其前的“several things”。此句的中文意思是“在工作中你可以做一些事来停止能量的消耗。”

Passage 2

1. The refrigerators and instruments are built in strict accordance with the requirements of the medicine surveillance department. 此句的谓语是被动语态“are built”。in strict accordance with the requirements of the medicine surveillance department”是介词短语（严格按照医药卫生部门的要求），在句中作方式状语。此句的中文意思是“冰柜和仪器要严格按照医药监管部门的要求建造。”
2. In order to guarantee the quality of each medicine, reagent and vaccine, Quality Control Laboratories are set in every pharmaceutical company to analyze the samples of them as necessary. 这句话的主要部分是“Quality Control Laboratories are set in every pharmaceutical company ...”（在每一个制药公司设立质检实验室）。in order to 引出动词短语放在句首作目的状语，而“to analyze the samples of them as necessary”是另一个动词不定式短语在句子中也是目的状语。此句的中文意思是“为了保证每一种药品、试剂和疫苗的质量，每个制药公司都会设立质检实验室，要按照需要对所需样品进行分析。”
3. Then there must be precise instruments in the laboratories for analysis, mustn' t there? 这句话句尾有一个反义疑问句的结构，是将句中谓语动词的形式倒装，故用“mustn' t there”。此句的中文意思是“那么，实验室里必须配备用于分析的精密仪器，是吧？”

Part III Examples with some of the key words and expressions.

Passage 1

1. confidential a. 机密的；表示信任的；获信任的

e.g. We'll take good care and keep what you've told us strictly confidential.

我们会非常小心，对您告诉我们的事严格保密。

We mustn't allow such a person access to confidential matters of the state.
不能让这样的人接触国家机密。

2.partition n. 划分，分区；分割；隔墙；隔离物

e.g. New offices are divided only by glass partitions.

新办公室仅使用玻璃隔板间隔。

Therefore, each partition is sending data to all other partitions, while leaving some data behind.

因此，每个分区都将数据发送到所有其他分区，同时留有一些数据。

3.majority n. 多数；成年

e.g. His opinion represents that of the majority.

他的意见代表大多数人的意见。

The suggestion was voted down by a large majority.

这项议案被大多数票否决了。

4. achieve v. 取得；获得；实现；成功

e.g. This is what we have to achieve.

这是我们必须实现的目标。

Even if we achieve great success in our work, we should not be conceited.

即使我们在工作中取得了很大的成功，也不应该自满。

achievable a. 可完成的

e.g. A 50% market share is achievable. 50%的市场份额是可以实现的。

It is often a good idea to start with smaller, easily achievable goals.

一开始把目标定得低一点，容易实现一点，总不失为一个好主意。

5. commuting n. 上下班，通勤

e.g. Eventually, I began to tire of commuting and decided to leave

Columbia for another university.

最终，我开始厌倦乘车上下班，决定要离开哥伦比亚去上另一所大学。

The authors explained that commuting takes up a considerable amount of time for the majority of working people.

作者解释道，对于大多数工作的人来说，每天上下班将会花费大量的时间。

6. contribute v. 贡献，出力；投稿；捐献

e.g. They contributed food and clothing for the refugees.

他们向难民捐助了食物和衣服。

The Sung Dynasty contributed three great inventions to world civilization.

宋朝为世界文明做出了三大发明的贡献。

She contributed an article to our magazine.

她给我们的杂志投了一篇稿子。

7. consume v. 消耗，消费

e.g. He had consumed the best years of his life in prison.

他在狱中度过了他的大好年华。

She consumes much of her time in studying.

她把很多时间用在学习上。

consumption n. 消耗, 消费

Water consumption decreased during the winter.

冬季水消耗量减少。

The laws have led to a reduction in fuel consumption in the US.

这些法律已经使美国燃料消费量有所减少。

8. professional a. 专业的

e.g. What professional qualifications does he have?

他有哪些专业资格?

You may need to seek professional help .

你可能需要寻求专业帮助。

9. disposable a. 一次性的, 可任意处理的; 用后就抛弃的;

e.g. The use of disposable products is considered ecologically unsound.

使用一次性产品被认为是没有顾及生态影响。

Free disposable cups and boiled water.

免费提供一次性水杯和开水。

10. accumulate v. 积累

e.g. Lead can accumulate in the body until toxic levels are reached.

铅会在体内积聚造成铅中毒。

It was his ambition to accumulate a million dollars before he turned thirty.

他立志要在而立之年以前攒下100万美元。

Passage 2

1. establish v. 建立, 创建

e.g.

The UN has established detailed criteria for who should be allowed to vote.

联合国已经为投票人资格制定了详尽的标准。

We had already established contact with the museum.

我们已经和博物馆建立了联系。

2. specific a. 具体的; 明确的

e.g. I asked him to be more specific.

我要求他说得更具体些。

There are several specific problems to be dealt with.

有几个特定问题需要解决。

3. biological a. 生物的；生物学的；与生物学相关的

e.g. Biological systems have been doing this for billions of years

亿万年来生物系统一直都是这样发生的。

Eugenics has a biological significance.

优生学具有生物学上的意义。

4. sensitive a. 敏感的；灵敏的

e.g. Young people are very sensitive about their appearance.

年轻人对外表很在意。

Employment is a very sensitive issue.

就业是一个非常敏感的问题。

5. correspondingly ad. 相应地

e.g. Correspondingly, the competition is becoming more and more fierce.

相应地，竞争也变得越来越激烈。

When you completely accept the psychological realities of the market, you will correspondingly accept the risks of trading.

当你完全接受了市场的心理现实，你就会相应地接受交易的风险。

6. assign v. 分派，选派，分配

e.g.

When I taught, I would assign a topic to children which they would write about.

我教书时会给孩子们布置一个题目，让他们去写作。

Under this system, each business must assign a value to each job.

在这个系统下，每项业务都要对每项工作赋予一定价值。

7. monitor n. 监测仪；显示器；监控人员，班长

v. 监控，监听

e.g. Officials had not been allowed to monitor the voting.

以前不允许官员监督投票。

The heart monitor shows low levels of consciousness.

心脏监测器显示患者神志不清。

8. guarantee n. 保证，担保

v. 保证，担保

e.g. Surplus resources alone do not guarantee growth.

仅有富余的资源并不能确保增长。

A famous old name on a firm is not necessarily a guarantee of quality.

公司悠久的品牌并不能确保商品的质量。

9. abandon v. 放弃，抛弃；离弃，丢弃

n. 放任，放纵

e.g. He claimed that his parents had abandoned him.

他声称父母遗弃了他。

Logic had prevailed and he had abandoned the idea.

理智占了上风，他打消了那个念头。

Part IV Key to exercises and scripts for listening

Task 1 (open)

Task 2(open)

Task 3

6—4—7—5—3—2—1

Task 4(open)

Task 5

1. B 2. A 3. C 4. B 5. B

Script for Task 5

Joe: Hi, Olivia, we are running out of printer paper. Steve asked me to get some from you.

Olivia: No problem. Wait a moment, please. I'll get you some.

Joe: Thanks. Oh, I'd like to ask for some stationery myself.

Olivia: Sure. What do you want?

Joe: Ball pens, folders, paper clips, labels and a stapler.

Olivia: Well, I can give you everything except folders and labels. I'm sorry, We don't have them.

Joe: That's Okay. Could I get them next week?

Olivia: Of course. We are planning to purchase some office supplies the day after tomorrow. By the way, is there anything that your group wants to order?

Joe: I'm not sure. You know I'm new. I need to talk about it with Steve.

Olivia: No problem. Would you please make a list of all the things that your group needs after your discussion?

Joe: Sure. I'll talk to Steve and the other people in my group and give you the list tomorrow. Is that OK?

Olivia: Sure! By the way, do you have any special requests?

Joe: Oh, yes! You've reminded me of something. I don't really like the pens we're using now. They aren't of good quality and don't write well. Can we change to another brand?

Olivia: Of course. I'll try to find some good quality pens. Maybe we should try some other suppliers. Don't worry!

Joe: That's great! I'll give you the list tomorrow.

Task 6:

1. last experiment
2. familiar
3. New Medicine
4. date
5. change
6. laboratory

Task 7

1. environmentally friendly
2. principles
3. paperless
4. telecommuting
5. electronic
6. Recycling

Task 8

1. Reduce, Reuse, Replace, and Recycle.
2. By keeping files in the computer, sending information by e-mail or text messaging, and don't print unless it is absolutely necessary. Encourage the staff to use paper on both sides or use recycled paper.
3. Because of the traffic jams and high gas prices.
4. Minimizing your office-related transportation.
5. Turn off or switch your computer and other electrical appliances to the energy-saving mode when you are off for more than half an hour. Set the office temperature at proper degrees, not too high or too low. Make good use of energy-efficient electronic equipment when possible.
6. It helps reduce environmental problems. For example, recycling of used batteries is not only resource-saving but also avoids pollution of the environment.

Task 9 (open)

Task 10

1. 绿色办公室管理简单易行。你可以记住这个基本原则——4项坚持：“少污染，再利用，找替代和重回收”。
2. 无纸化办公室确实是可以实现的，减少打印，办公环境会更加健康宜人。
3. 现今，由于交通堵塞和油价高涨，很多人都转而使用公共交通设施和拼车去上班。
4. 若你要离开的时间超过半个小时，你就要关掉电脑和其他电器，或者将它们调至省电模式。
5. 总之，我们可以做到更有效地利用资源和减少丢弃废品，节省能源和钱财，而且有助于改善我们的工作环境。

Task 11

1. F
2. T
3. F
4. F
5. T
6. T

Task 12

1. abandon
2. Bioengineering
3. guarantee
4. technician
5. established
6. correspondingly
7. professional
8. analysis

Task 13

Telephone Message

From: Mr. David Cotton To: Ms. Jenny Brown

Date: Oct. 28th, 2016 Time: 2:00 p.m.

Message:

Ms. Brown,

Mr. David Cotton from Universal Company called you this afternoon. He will come to Beijing this Thursday morning and visit you at 9:30 this Friday morning to discuss the details of the cooperation. Please call him back if you are not available at the time.

Signed by: Linda

Script for task 13

Linda Wei: Good afternoon. Bake Company, Can I help you?

David Cotton: Good afternoon. Can you put me through to Jenny Brown, please?

Linda Wei: Sorry, Ms. Jenny Brown is out of the office at the moment. Can I take a message?

David Cotton: Sure. This is David Cotton from Universal Company.

Linda Wei: Excuse me, could you spell you surname, please?

David Smith: Yes, C-O-T-T-O-N. Cotton

Linda Wei: Thanks. What's the message?

David Cotton: I will arrive in Beijing this Thursday morning and visit Ms. Jenny Brown as originally agreed to discuss the details of our cooperation. I would like to visit her at 9:30 on Friday morning. Please ask her to call me back if she is not available at the time.

Linda Wei: OK, I will pass the message to her.

David Cotton: Thank you very much.

Linda Wei: You are welcome.

Task 14 (open)

Task 15 (open)

Task 16 (open)

Part V Chinese translation of passages

Passage 1

在绿色办公室工作

我们把人生的大部分时间花费在办公场所，为什么不实施管理使我们的办公室更健康，更有效率，更为环保呢？我们要做的仅仅是些许简单的调整。

绿色办公室管理简单易行。你可以记住这个基本原则——4项坚持：“少污染，再利用，找替代和重回收”。这里有一些小贴士来实现这一原则。

1. 使用环保纸张和打印

随着电脑和网络的发展，装满纸张文件的橱柜不再是办公室里的必需品。你可以把文件存在电脑里，并通过电子邮件或和电子微信发送信息。若非绝对必需，不要进行打印。鼓励员工两面使用纸张或者使用再生纸。无纸化办公室确实是可以实现的，减少打印，办公环境会更加健康宜人。

2. 环保上下班

现今，由于交通堵塞和油价高涨，很多人都转而使用公共交通设施和拼车去上班。不管怎么说，这真的有利于环保。再有，我们真的需要为解决一件小问题而去到城区的另一头吗？也别忘了还有电信手段。也许一个电话或一封电子邮件就能解决问题。许多公司甚至允许他们的员工部分时间在家里办公。总之，尽量减少与办公室有关的出行的方法不仅省钱省时，也会有利于拯救我们的星球。

3. 减少办公室能耗

电脑、打印机、中央空调和照明会消耗大量的电能。在工作中你就可以做一些事来停止能量的消耗。若你要离开的时间超过半个小，你就要关掉电脑和其他电器，或者将它们调至省电模式。设定恰当的办公室温度，不要太高也不要太低。如有可能，要充分利用高效低能耗电器设备。

4. 其他

办公室不断积累的废物是造成各种环境问题的一大原因。垃圾分类可以将很多废物循环利用。比如，二手电池的再利用不仅节约能源，而且会避免环境污染。在公司的灶间你最好携带你自己的保温杯，而不使用一次性的杯子或容器。不管怎么说，这些措施都有助于提高员工的环境意识。

总之，我们可以做到更有效地利用资源和减少丢弃废品，节省能源和钱财，而且有助于改善我们的工作环境。参与环保不分早晚！

Passage Two

医药公司的办公场所

史蒂芬·布朗先生，一家大型医药公司的经理，受邀来到湖南生物工程学院

的广播室。

记者：嗯，今天我们邀请到史蒂芬·布朗先生来这里谈谈医药公司。布朗先生是 TCF 生物制药有限公司的行政部经理。

史蒂芬：非常荣幸。

记者：史蒂芬，生物制药公司的管理部门和其他类型的公司有区别吗？

史蒂芬：一般来说，我们具有和其他类型公司一样的基本部门，比如总经理办公室，市场部，销售部，研发部和人力资源部。然而，我们也需要设置别的公司没有的特殊的工作部门。比如说特殊的医药品冰柜室和实验室。

记者：你们为什么需要冰柜室呢？

史蒂芬：一些药品、试剂、疫苗、生物制品和血液制品对温度和湿度敏感。医药公司必须获取和安装特定的药品冷储设备。

记者：听起来很专业啊。

史蒂芬：的确如此。冰柜和仪器要严格按照医药监管部门的要求建造。温度应该控制在 2°C 到 8°C 之间，而湿度相应地控制在在 35% 到 75% 之间。要指派专业人员监控温度和湿度。同时，每天要定时做记录加以保存。

记者：那实验室呢？

史蒂芬：为了保证每一种药品、试剂和疫苗的质量，每个制药公司都会设立质检实验室，要按照需要对所样品进行分析，目的是避免不合格的产品流入市场。

记者：那么，实验室里必须配备用于分析的精密仪器，是吧？

史蒂芬：是的，你说的对。我们也需要大量的熟练技术人员做这项工作。

记者：对于实验室的工作有严格的标准吗？

史蒂芬：当然有的。对温度、湿度、卫生和电压稳定等都有严格的标准。

记者：你们怎么处理实验产生的废弃物品？

史蒂芬：这是一个很好的问题。废水废液不可以随意丢弃。必须把它们定期送到废水处理站。

记者：太了不起了。我还想知道……

Unit 3 Bio-agriculture

Part I More information for the unit

Definition of Genetically Modified organisms (GMOs)

Genetically modified organisms (often abbreviated as GMOs) are simply crops, whose genetical material has been modified. There are two ways to do this:

1. Traditional selection and breeding (much like breeding animals),
2. Modern, scientific modification of the crops.

The following list of strengths and weaknesses of genetically modified crops will deal with the scientific effects and applications.

Process of Genetically Modifying Crops

First and foremost, the genetic material of two or more crops whose genetic property or properties will be mixed has to be fully mapped. The phrase “genetic mapping” means to have a full and exhaustive recorded knowledge of the genes, and the sequence of genes of the genetically mapped organism(s).

When each of the genes (and their functions) of the particular crops has been identified, they are then separated in a science lab. These genes are then cloned and injected into the sequence of genes embryonic form (sometimes into stem cells) of the recipient crop. Finally the seed of the modified crop is planted and grown in greenhouses through traditional methods.

Advantages of GMOs

- Major trading countries obtain most of the benefit from the production and trade of genetically modified crops. This might cause more geopolitical conflicts.
- Less deforestation needed to feed the world’s growing population (UN projections say that the world population will reach 8.15 billion compared to 6.18 billion in year 2000). This decreases carbon dioxide in the atmosphere, which in turn slows global warming.
- Decrease in food prices due to lower costs and higher yield. As people in poor countries spend over half of their income on food alone, lower food prices mean an automatic reduction of poverty.
- Less starvation in the world due to decreased food prices.
- More nutritious. This has been proven and tested many times.
- Rigorous testing of ALL GMO crops and products. This makes GMOs much safer than organic (the traditional) crops.

- ALL GMOs that are sold in the market, due to the strict tests. If the slightest chance of a health hazard, a GMO is NOT allowed to enter the markets.
- Strict and very complex standards that GMOs have to fully meet.
- More thoroughly understood crops due to the rigorous testing.
- Scientific development of agriculture, health and related sciences due to the better understanding of the products. For example, the development of new medicines.
- Creation of “super foods” due to better knowledge. Super foods are types of food that are cheap to produce, grow fast in large quantities, highly nutritious.
- New products. For examples, scientists identified the gene responsible for caffeine in coffee beans; by excluding this gene, decaffeinated coffee beans can be grown naturally.
- Reduction of sicknesses and illnesses, as GMO crops are more nutritious. Vitamins and minerals can be provided to children and adults, where they were inaccessible before (i.e. the world’s poorest and/or most secluded areas).
- Developments of new kinds of crops that can be grown in extreme climates, for example, dry or freezing environments (like deserts). For example, scientists developed a type of tomato that grows in salty soil.
- Reduction of world starvation due to increased production.

Disadvantages of GMOs

- Cross-pollination with traditional, organic plants. Cross pollination can occur at quite large distances. New genes may also be included in the offspring of the traditional, organic crops miles away. This makes it difficult to distinguish which crop field is organic, and which is not, posing a problem to the proper labeling of non-GMO food products.
- New trade, tariff and quota issues may arise between countries, regions.
- As the US is the biggest producer of GMO crops, their exports may rouse more anti-American feeling, due to “Americanization” worldwide.
- Possible creation of new kinds of weapons; genetic food and beverage weapons.
- Widening corporate size gaps between food producing giants and smaller ones. This might cause a consolidation in the market: fewer competitors increase the risk of oligopolies, which might increase food prices.
- Larger companies might have more political power. They might be able to influence safety and health standards (example: less stringent regulations, standards and requirements).
- Activists’ increased ability to boycott and influence food market, food retailing, and food prices.
- Unforeseen the risks and dangers due to the complexity of nature.
- Allergies may become more intense, and also, new allergy types may develop.

- Discrepancies in information flow. GMO producers stress the benefits, but are reluctant to talk about the risks and dangers.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. By 1963, largely due to Borlaug's techniques, Mexico was producing six times as much wheat per year as in the year before Borlaug's arrival. (Para. 1)

Explanation: as ... as ... 是表示同级比较的固定格式，意为“与...一样”。如 Tom is as tall as me. 汤姆和我一样高。又如：She explained that warmer water cannot hold as much CO₂ as colder water. 她解释说冷水比热水能贮留更多的 CO₂。在同级比较前加上倍数，则表示前者是后者的多少倍。如 American universities train roughly twice as many PhDs as there are jobs for them. 美国的大学培养的博士数量是所能提供的工作职位数目的两倍。此句的中文意思是：到 1963 年，主要受益于博洛格的技术，墨西哥年均小麦产量达到了博洛格到来的前一年产量的 6 倍。

2. ... for example, farmers in climates that once proved inhospitable to certain crops are now able to produce abundant harvests of varieties of those crops that have been genetically engineered to withstand the climate. (Para. 3)

Explanation: 这是一个结构比较复杂的复合句，包含了两个定语从句。主句是...farmers in climates ... are now able to produce abundant harvests of varieties of those crops。一个定语从句是 that once proved inhospitable to certain crops 修饰主句中的先行词 farmers；另一个定语从句 that have been genetically engineered to withstand the climate 修饰其先行词 those crops。此句的中文意思是：例如，曾经被证明为不适宜种植某些农作物的气候区域，如今那里的农民能够获得丰富的收成，收获多种能抵御该气候的转基因农作物产品。

3. Nevertheless, despite the great promise of this technology to benefit human quality of life, recent research has shown potential dangers that GMOs may bring to the environment and human health.

Explanation: Nevertheless 可用作副词和连接副词，意为：“然而，尽管如此”。在这里它引导的句子是 Nevertheless recent research has shown potential dangers。其中插入了一个介词短语 despite the great promise of this technology to benefit human quality of life；主句后跟随了一个由 that 引导的定语从句 that GMOs may bring to the environment and human health，修饰其先行词 dangers。despite 是介词，引出介词短语。此句的中文意思是：然而，尽管这项技术具有造福人类生活品质的巨大前程，近期研究表明转基因生物可能对环境 and 人类健康造成潜在危害。

4. Starvation is as often a result of inadequate food production as it is of inadequate distribution.

Explanation: 此句的基本结构是 **Starvation is as often a result ... as ...**。as ... as ... 引导的 2 个部分的结构一般遥相呼应，后一个 as 引导的部分的结构常省略与前面 as 部分中的相同部分，这里的后一部分的完整结构应该是 **as it (starvation) is (a result) of inadequate distribution**。再如 **She isn't going out with a man who is twice as old as she (is old)**。她打算和一个年龄比她大一倍的男人出去散步。此句的中文意思是：饥饿通常被认为是粮食生产不足引起的，更是粮食分布不均的结果。

Passage 2

1. And experts say growers may lose perhaps one-third of their harvest to disease and insects.

Explanation: 分数在英语中通常是借助于基数词和序数词来共同表达的。其中基数词表示分子，序数词表示分母。但是， $1/2$ 不能说 a(one) second，而要说 a(one) half。

如：The centimeter is one-tenth of the decimeter or one-hundredth of the meter. 厘米是分米的十分之一，或者说是米的百分之一。分子除用 one 外，也可用 a；如果分子大于 1，分母要用复数形式。如 About two thirds of the students attended the meeting. 大约 $2/3$ 的学生参加了会议。短语动词 lose to 的含义是“输给”。故此句的意思是：专家表示，病虫害可能会使种植者失去三分之一的收成。

2. Next comes learning the job of each gene.

Explanation: 此句为一个全部倒装句，正常语序是 Learning the job of each gene comes next. 表示地点的副词常放在句首引导的短小的句子常用倒装结构起强调作用。如：Here comes the bus. 车来了。此句的中文意思是：接下来是研究每个基因的功能。

3. The average West African cocoa farmer produces about four hundred kilos of beans per hectare.

Explanation: average 一般用作名词或形容词，意为“平均数，平均的”。如 An average of 10 students are absent each day. 平均每天有 10 个学生缺席。Average grain output per mu has reached 1,300 jin. 平均亩产量达到了 1300 斤。Average 还可以用作动词。如 He averages two trips a year. 他平均每年旅游两次。此句的中文意思是：西非可可种植者平均每公顷可生产大约 400 公斤可可豆。

Part III Examples with some of the key words and expressions

Passage 1

1. minimize v. 使减到最少

e.g. At every stage we try to minimize waste.

在每个阶段，我们都努力减少废弃物。

What we can do is to minimize the damage to our economy during this downturn.

我们能做的就是在此次衰退期使经济损失最小化。

2. alter v. 变更

e.g. Lives can be revolutionized completely by altering our view of food!

通过改变对食物的观点，生活可能会发生彻底的大变革！

This method can alter the data structure of the results.

这个方法可以改变结果的数据结构。

3. genetically modified organisms 转基因生物

e.g. Greenpeace has been an advocate for keeping Genetically Modified Organisms

(GMO's) out of our food supply and encouraged consumers to only buy foods that are GMO-free.

绿色和平组织一直在倡导我们的食物供应远离转基因生物，并鼓励消费者只买非转基因食物。

4. species n. 物种；种类

e.g. Pandas are an endangered species.

大熊猫是一种濒危物种。

They also converted one species of bacterium into another through a "genome transplant".

他们还通过“基因移植”把一个菌种转变为另一个菌种。

5. shift n. 移动；变化；手段；轮班 v. 转移；改变；替换

e.g. He stopped, shifting his cane to his left hand.

他停下来，把手杖移到左手。

His father worked shifts in a steel mill.

他的父亲在一家钢铁厂轮做日夜班。

6. be credited with 被誉为, 归功于

e.g. Howard Schultz can be credited with making rich, good quality coffee popular across America, Asia and elsewhere.

霍华德·舒尔兹可以被誉为创造了浓郁优质的咖啡, 在美国、亚洲和其他地方广受欢迎。

Watt should be credited with inventing the steam engine.

人们把蒸汽机的发明归功于瓦特。

7. be derived from 来源于

e.g. The popular term "soccer" is thought to be derived from "association".

众人皆知的名称"足球"被认为是由"协会"这个词衍生而来。

Positive and negative seem so far from one another, yet in so many ways, they can be derived from the very same things.

正面与负面之间看上去总是彼此相去甚远, 但是在很多方面它们又可能是从同一些事情中引申出来的。

8. nevertheless ad. or conj. ad 然而, 不过

ad. 然而, 不过; 虽然如此

e.g. Nevertheless, I cannot answer for her.

不过我无法为她作答。

You study well; nevertheless, you seldom help the others.

你学习好, 然而你很少帮助别人。

9. despite prep. 尽管, 不管

e.g. I failed the test despite studying all night.

尽管整夜学习, 我还是考试不及格。

All the people on the ship were in safety despite the storm.

虽然遇到风暴，船上所有的人都安然无恙。

10. ban v. 禁止，取缔

e.g. He was banned from driving for three years.

他被禁止驾驶 3 年。

When you ban something like this, you only dignify it with significance.

在禁止这样的事情时，你只会提升其重要性。

Passage 2

1. genetic a. 遗传的；基因的

e.g. What are the genetic reasons?

遗传原因是什么？

Researchers believe this could account for the fact that humans have less genetic diversity than other species.

研究人员认为，这样就可以解释为什么人类的遗传多样性要少于其它物种。

2. genome n. 基因组

e.g. If we could have a big enough database of human genomes, then you can see the interplay of genetics.

如果我们有一个足够大的人类基因组数据库，那么你就可以了解遗传间的相互作用。

As scientists decode more and more genomes, the tree of life gets pretty complicated.

随着科学家解码的基因组越来越多，生命之树就变得相当复杂。

3. prevent v. 预防，防止

e.g. Further treatment will prevent cancer from developing.

进一步治疗将会防止癌症恶化。

Its nationals may be prevented from leaving the country.

其公民可能会被阻止离开该国。

4. average a. 平均的 n. 平均数

e.g. The average price of goods rose by just 2.2%.

商品的平均价格仅上涨了 2.2%。

I was only average academically.

我的学业成绩只能算平平。

Take the average of those ratios and multiply by a hundred.

取那些比率的均值在乘以一百。

5. external n. 外部；外观；外面

a. 外部的；表面的

e.g. Such events occur only when the external conditions are favorable.

此类事件只有当外界条件有利时才会发生。

The open cities will be testing grounds for our external policies.

开放的城市将成为测试我们对外政策的基础。

6. yield n. 产量；收益

e.g. Maize was a high and stable yield crop.

玉米是一个高产稳产的作物。

The high yields available on the dividend shares made them attractive to private investors.

股息股能获得的高收益使它们对私人投资者们很有吸引力。

7. common a. 共同的；普通的

e.g. Oil pollution is the most common cause of death for seabirds.

石油污染是海鸟死亡的最常见的原因。

He had very little in common with his sister.

他和他姐姐几乎没有相同之处。

Part IV Key to exercises and scripts for listening

Task 5

- A. agricultural biotechnology
- B. biodynamic
- C. chemicals
- D. friendly environments
- E. stability and fertility
- F. conventional systems
- G. affect
- H. be relieved
- I. pesticides
- J. maintaining

Task 6

- A. benefits
- B. the world's food needs
- C. natural resources
- D. plants
- E. livestock
- F. molecular markers
- G. genetic modification
- H. per hectare
- I. drought
- J. floods

Task 7

- 1. infectious fungus
- 2. the genetic level/genetically modified organisms
- 3. DNA recombinant technology/genetic engineering
- 4. has entirely shifted
- 5. had been credited with
- 6. negative effects/ opposition to GMOs

Task 8

- 1. To minimize the loss of wheat production due to stem rust, an infectious fungus.
- 2. By 1963, largely due to Borlaug's techniques, Mexico had been producing six times as much wheat per year as in the year before Borlaug's arrival. And it earned Borlaug a

Nobel Peace Prize in 1970.

3. The GMO technology allows selected individual genes to be transferred from one organism into another, also between non-related species.
4. The drug was derived from genetically modified plants.
5. Despite the great promise of this technology to benefit human quality of life, recent research has shown potential dangers that GMOs may bring to the environment and human health.

Task 9

1. F
2. T
3. T
4. F
5. F
6. F

Task 10

1. 为培育有异常抗病能力的小麦品种，博洛格研发出一些杂交、收割和播种的简单技术。
2. 转基因生物可以定义为生物有机体（即植物、动物或微生物），其中的基因物质（DNA）通过非自然方式，即不经过交配和/或自然重组而发生改变。
3. 曾经被证明为不适宜种植某些农作物的气候区域，如今那里的农民能够获得丰富的收成，收获多种能抵御该气候的转基因农作物产品。
4. 转基因生物的应用范围甚至超出了食品生产，因为它们现在经常用于药物的开发。
5. 许多担忧其负面影响的机构和政府都提高了反对转基因生物声调。

Task 11

1. genomes/increase production/prevent disease
2. Mapping genes/organism
3. took the lead

Task 12

1. 可可粉/ cocoa butter
2. 基因图谱/ genomes
3. 对外研究/ a competitor
4. 0.5 克/ one-third

Task 13

<i>Advantages of GMOs</i>	<i>Disadvantages of GMOs</i>
<p>B. Less pesticide is needed to be used due to insect-pest resistant plants.</p> <p>C. More informed customers, because they need to make more informed decisions in regard to nutrition, agriculture and science.</p> <p>F. More economically friendly, as pesticides do not go into the air, soil, and water (especially freshwater supplies). Their production hazards to the environment also decrease.</p> <p>H. Decrease in costs of growing and farming, due to the reduced use of pesticides.</p> <p>K. Higher crop yields.</p> <p>M. Farmers have more income, which they could spend on such things as, for example, the education of their children.</p>	<p>A. Spread of new, more resistant “super weeds” and “super pests”.</p> <p>D. Taste of GMOs is not as good or “natural”.</p> <p>E. Critics say GMOs may cause health problems.</p> <p>G. GMOs are made because it is possible to make them, not because consumers feel their need.</p> <p>I. Harm to other organisms. For example, genes and their effect included in a crop may turn out to be poisonous to insects (monarch butterfly poisoned by GMO corns).</p> <p>J. Possible damages to the environment.</p> <p>L. Possible greed of GMO manufacturing firms.</p> <p>N. Additional costs of labeling whether products are GMOs or not. This might increase costs of foods.</p>

Task 14: (Open)

Scripts for Task 5:

What is bio-agriculture?

Jimmy: Hi, Professor Edward. I know that bio-agriculture is a very hot term, and sometimes it is referred to as agricultural biotechnology. You have spent years so far working in this field. Could you please tell us —what bio-agriculture actually is?

Professor Edward: Good question! I’d like to discuss it with you. Generally, bio-agriculture is an inclusive term for any agricultural farming that uses organic or biodynamic farming methods, with no synthetic fertilizers or agricultural chemicals.

Jimmy: You mean that we will have better harvests and much more friendly environments by using bio-agricultural farming technologies.

Professor Edward: You're right. Bio-Agriculture can meet the world's current and future food demands while maintaining the stability and fertility of the soil. These methods can be as productive per unit of land as conventional systems. This is evident from the results of over 300 comparative farm tests and surveys.

Jimmy: And then, how does the bio-tech affect the environment?

Professor Edward: The bio-agricultural farming is good for environmental management, both in and out of the soil. Weeds are useful indicators of imbalances in the soil.

Jimmy: Sounds great! I think it is very important to get the farmers' understanding of the technology.

Professor Edward: You're right. Farmers learn to understand their purposes and can be relieved from weeding and applying pesticides through developing active, healthy soil and maintaining natural biological processes.

Jimmy: Now I'm a little more familiar with the concept. Thanks a lot, Professor Edward.

Professor Edward: My pleasure.

Scripts for Task 6:

What biotechnologies can be used in agriculture?

Jimmy: Nice to meet you again, Professor Edward.

Professor Edward: Nice to meet you too!

Jimmy: I've read some materials about agricultural biotechnology since I talked with you last time.

Professor Edward: I'm glad that you are interested in it.

Jimmy: I know that the whole world now is seeking the knowledge of the benefits of biotechnology in meeting the world food needs while conserving natural resources.

Professor Edward: That's true. Now researchers are exploring new agricultural biotechnologies that can improve productivity and protect the environment as well.

Jimmy: What biotechnologies can be used in agriculture?

Professor Edward: There are many bio-techs, such as improved tissue culture in plants

and new vaccine technologies in livestock. Use of molecular markers and genetic modification for crops are ways to solve some environmental problems.

Jimmy: So everyone can get benefits from them.

Professor Edward: Biotechnology has great potential to help farmers, especially smallholder farmers in developing countries to produce more food per hectare, even in areas where drought, pests and floods have been continual challenges.

Jimmy: It's so informative talking with you each time!

Professor Edward: Welcome to ask me whenever you have questions about this field.

Part V Chinese translation of passages

Passage 1

转基因生物

1944 年，科学家诺曼·博洛格（Norman Borlaug）在墨西哥从事小麦合作研究生产项目期间，从事研究如何尽量减少感染性真菌——茎锈病真菌引起的小麦产量损失的途径。为培育有异常抗病能力的小麦品种，博洛格研发出一些杂交、收割和播种的简单技术，结果使麦田长势极好。到 1963 年，主要受益于博洛格的技术，墨西哥年均小麦产量达到了博洛格带来的前一年产量的 6 倍。博洛格带着他的农业新技术，来到包括印度和巴基斯坦在内的缺粮国家，同样引起了当地农业部门的技术革新。这些农艺创新导致了闻名世界的“绿色革命”，并且为博洛格赢得了 1970 年的诺贝尔和平奖。

在随后的三十年中，遗传学家在博洛格成果的基础上研发了一系列技术，他们在基因层面上改变农作物，产生了众所周知的转基因生物（genetically modified organisms, GMO）。转基因生物可以定义为生物有机体（即植物、动物或微生物），其中的基因物质（DNA）通过非自然方式，即不经过交配和/或自然重组而发生改变。该技术通常被称为“现代生物技术”或“基因技术”，有时也被称为“重组 DNA 技术”或“基因工程”。转基因技术允许经过挑选的单个基因从一个生物体转移到另一个生物体，也允许非相关物种之间的转移。

由转基因生物制成或使用转基因生物的食品通常被称为转基因食品。转基因生物的使用已经完全颠覆了世界粮食生产所盛行的基本法则。例如，曾经被证明不适宜种植某些农作物的气候区域，如今那里的农民能够获得丰富的收成，收获多种能抵御该气候的转基因农作物产品。

转基因生物的研究甚至超出了食品生产，因为它们现在经常用于药物的开发。埃博拉病毒的爆发让每个人都感到一丝紧张。两名曾在利比亚工作的美国从教人员接受了一种实验性药物的治疗，这种药物被誉为救命有功。该药物源自于转基因植物。正如《列克星敦先驱导报》所解释的，这种药物“不是造出来的，而是长出来的——它生长于一个长满转基因烟草植物的温室”。

然而，尽管这项技术具有造福人类生活品质的巨大前程，近期研究表明转基因生物可能对环境和人类健康造成潜在危害。许多担忧其负面影响的机构和政府都提高了反对转基因生物声调。一些国家不仅禁止转基因生物的生产，而且还禁止开展转基因生物研究。

食品成本的不断攀升引发了 2008 年的全球粮食危机，这印证了饥饿仍是世界许多地方亟待解决的问题。饥饿通常被认为是粮食生产不足引起的，更是粮食分布不均的结果。因此，转基因生物一如既往地会是一个重要的争议性话题。

Passage 2

巧克力背后的基因秘密

可可树生长在非洲、亚洲和中美洲和南美洲炎热多雨的地区。可可豆用于制作可可粉、可可脂，当然还有巧克力。

生产 0.5 克巧克力需要大约 400 粒可可豆。专家表示，病虫害可能会使种植者失去三分之一的收成。

但现在科学家们已获得了两种可可树的基因图谱。这些基因组近乎完整，有望引导科学家发现提高产量和预防病害的新途径。

基因图谱是了解有机体的第一步。接下来是研究每个基因的功能。美国玛氏食品公司 (Mars) 率先出资对福拉斯特罗可可树做基因图谱。福拉斯特罗可可树的可可豆产量占全球总产量的 80% 到 90%。玛氏依赖这些可可豆生产旗下 M&M's 以及其他品牌的巧克力糖果。西非可可种植者平均每公顷可生产大约 400 公斤可可豆。但玛氏公司植物科学和对外研究主管霍华德·雅娜·夏皮罗 (Howard-Yana Shapiro) 认为，科技能够大大提高产量。玛氏公司的竞争者之一，美国好时食品公司 (Hershey's) 支持对一种很不常见的可可树——克里奥罗可可树做基因图谱。

Unit 4 Biomedicine

Part I More information for the unit

Some abstracts taken from articles related to biomedicine

1. We report the design, synthesis, and assembly of the 1.08–mega–base pair *Mycoplasma mycoides* JCVI-syn1.0 genome starting from digitized genome sequence information and its transplantation into an *M. capricolum* recipient cell to create new *M. mycoides* cells that are controlled only by the synthetic chromosome. The only DNA in the cells is the designed synthetic DNA sequence, including “watermark” sequences and other designed gene deletions and polymorphisms, and mutations acquired during the building process. The new cells have expected phenotypic properties and are capable of continuous self-replication.

2. This review focuses on the synthesis, protection, functionalization, and application of magnetic nanoparticles, as well as the magnetic properties of nanostructured systems. Substantial progress in the size and shape control of magnetic nanoparticles has been made by developing methods such as co-precipitation, thermal decomposition and/or reduction, micelle synthesis, and hydrothermal synthesis. A major challenge still is protection against corrosion, and therefore suitable protection strategies will be emphasized, for example, surfactant/polymer coating, silica coating and carbon coating of magnetic nanoparticles or embedding them in a matrix/support. Properly protected magnetic nanoparticles can be used as building blocks for the fabrication of various functional systems, and their application in catalysis and biotechnology will be briefly reviewed. Finally, some future trends and perspectives in these research areas will be outlined.

3. Super paramagnetic iron oxide nanoparticles (SPION) with appropriate surface chemistry have been widely used experimentally for numerous in vivo applications such as magnetic resonance imaging contrast enhancement, tissue repair, immunoassay, detoxification of biological fluids, hyperthermia, drug delivery and in cell separation, etc. All these biomedical and bioengineering applications require that these nanoparticles have high magnetization values and size smaller than 100 nm with overall narrow particle size distribution, so that the particles have uniform physical and chemical properties. In addition, these applications need special surface coating of the magnetic particles, which have to be not only non-toxic and biocompatible but also allow a targetable delivery with particle localization in a specific area. To this end, most work in this field has been done in improving the biocompatibility of the materials, but only a few scientific investigations and developments have been carried out in improving the quality of magnetic particles, their size

distribution, their shape and surface in addition to characterizing them to get a protocol for the quality control of these particles. Nature of surface coatings and their subsequent geometric arrangement on the nanoparticles determine not only the overall size of the colloid but also play a significant role in bio kinetics and bio distribution of nanoparticles in the body. The types of specific coating, or derivatization, for these nanoparticles depend on the end application and should be chosen by keeping a particular application in mind, whether it be aimed at inflammation response or anti-cancer agents. Magnetic nanoparticles can be b to drugs, proteins, enzymes, antibodies, or nucleotides and can be directed to an organ, tissue, or tumour using an external magnetic field or can be heated in alternating magnetic fields for use in hyperthermia. This review discusses the synthetic chemistry, fluid stabilization and surface modification of super paramagnetic iron oxide nanoparticles, as well as their use for above biomedical applications.

Part II Explanation of difficult sentences in reading passages

Passage 1

3. As our understanding of genetics, tumor cells, and the immune system grows, better treatments will be discovered at an ever-increasing pace. (Para.1)

Explanation: 这是一个主从复合句。句中 **as** 是连词，表示“随着”，引导时间状语从句。主句主语是 **better treatments**，谓语是被动语态 **will be discovered**。此句的中文意思是：随着我们对基因、肿瘤细胞、免疫系统认识的增加，更好地治疗方法将会被快速的发现。

4. The targeted drugs are designed to attack specific markers on cancer cells, reducing the side effects of the drug. (Para.3)

Explanation: 此句的前半部分是句子的骨干，主谓语是 **The targeted drugs are designed**。to attack specific markers on cancer cells 是不定式短语作目的状语。reducing the side effect ...是分词短语做伴随状语。本句的意思是：人们设计靶药物去攻击癌细胞上的特定标记，减小药物的副作用。

5. Since cancer cells can become resistant to chemotherapy, new drugs are being developed to shut down the pumps in cancer cells. (Para.4)

Explanation:这是一个主从复合句。since 是“因为”的意思，引出原因状语从句；逗号后面为主句 new drugs are being developed 的骨架部分，谓语用的是被动语态的现在进行时。动词不定式 to shut down the pumps in cancer cells 表示“目的”。此句的意思是因为癌症对化学疗法有抵触作用，所以人们研究新药去切断癌细胞的源头。

6. These drugs help protect organs which may be damaged by chemotherapy. (Para.5)

Explanation: 这是带有 which 引导的定语从句的主从复合句，定语从句修饰先行词 organs。主句中 help protect 之间省略了不定式符号 to。也就是说，help 之后的宾语动词可以有两种形式：help (to) protect。此句的意思是：这些药物帮助保护可能会被化学疗法伤害的器官。

Passage 2

3. After several months, they had worked out the structure of the chemical from which all life is built.

Explanation: 主句的主谓语是 they had worked out...，谓语用的是过去完成时态，而 which 引导的定语从句中关系代词 which 做介词 from 的宾语。此句的中文意思是，几个月之后，他们计算出了构成所有生命的化学物质的结构。

4. Nearly everything around us is made of molecules, which are built from atoms — usually just a few atoms per molecule.

Explanation: 句中 which 引导的非限定性定语从句做 molecules 的定语。破折号后面的是 atoms 的同位语，补充说明 atoms 的分子含量。此句的中文意思是，我们周围的几乎所有东西都是由分子组成，分子是由原子构成，每个分子通常只有很少几个的原子。

Part III Examples with some of the key words and expressions

Passage 1

1. cellular a. 细胞的，蜂窝状的

e.g. We may all be part of some larger body of humanity, but our interactions mainly occur at the individual cellular level.

我们可能都是某个人类更大区域的一部分，但是我们的相互作用却主要发生在个体细胞水平。

2. toxic a. 有毒的，中毒的

e.g. If you have pets or children, please note that some plants are toxic.

如果你家里有宠物或者孩子，请注意一些植物是有毒的。

5. symptom n. 症状，病症

e.g. One by one his symptoms disappeared.

他的症状一个一个地消失了

6. resistant a. 抵抗的，反抗的

e.g. How can we improve plants to make them more resistant to disease? 如何改良植物以使其具有更强的抗病性？

7. binding (to) 绑定（到）

e.g. After making that decision, you specify which WSDL is binding to and where the output files should go.

在做出决定之后，您需要指定将哪一个 WSDL 绑定，以及将输出文件发送到何处。

8. diagnostic a. 诊断的

e.g. Doctors hope it can be used as a diagnostic tool in homes and hospitals.

医生们希望它能用作一种诊断工具，在家里和医院使用。

9. metastasize v. 转移；迁徙

e.g. These three malignant properties of cancers differentiate them from benign tumors, which are self-limited, and do not invade or metastasize.

癌症的这三种危害性使其与良性肿瘤不同，后者具有自限性，而且不侵入或不转移特性。

10. radiation n. 辐射；发光；放射物

e.g. And then he analyzed the components of that radiation and this is what he found.

然后他分析了那种辐射的组成部分，而这就是他的发现。

11. ultimate a. 最终的；极限的

e.g. The brain is the ultimate fountain of ideas.

大脑是思想的根本源泉。

Passage 2

1. declare v. 宣布，声明

e.g. The next section details how to declare these objects in JNDI.

下一节将详细说明如何在 JNDI 中宣布这些对象。

2. work out v. 算出，做出

e.g. In the meantime, most of the problems have been worked out.

与此同时，大部分问题已经弄清楚了。

3. instruction n. 指令，指示；instructions 用法说明

e.g. We executed that instruction and we moved to the next topic.

我们执行了那个指令，而且转到下一个课题。

4. coil up v. 卷起来

e.g. Her hair was coiled up on top of her head.

她头顶上的头发烫成了发卷。

5. complex n. 复合体；综合设施 a. 复杂的；合成的

e.g. They have a plan for constructing a new stadium and leisure complex.

他们有计划要建造一座新的体育馆和娱乐综合大楼。

Can they cope with the complex situation?

他们能处理这么复杂的局面吗？

6. pair up v. 配对

e.g. Non-smokers are paired up as roommates.

不吸烟者被双双配成室友。

Part IV Key to exercises and scripts for listening

Task 5:

Script for task 5

People and dogs share some cancer-causing genetic mutations. Now the government is funding an effort to learn from that.

Scientists at the National Institute of Health (NIH) say they need animal models that imitate the human immune system to study the effects of these drugs. This week, an advisory committee of the National Cancer Institute at NIH said it will start a new program in 2017 to study experimental immunotherapies in dogs with cancer. The National Cancer Institute has been performing clinical trials in dogs since 2003 with other cancer therapies, but this is the first large-scale dog immunotherapy effort the institute is supporting.

Scientists hope that the canine trials will attract interest from pharmaceutical companies that are developing immunotherapies. Once the studies are done, all the data generated will be made available in a public online database as a resource for researchers.

1. Because people and dog share some cancer-causing genetic mutations.

2. In 2017.

3. In 2003.

4. NIH stands for National Institute of Health.

Task 6:

1. have trouble
2. get started
3. graduating
4. related to
5. recorded
6. mail

Task 7:

1. Toxic
2. resistant
3. potential
4. diagnostic
5. detect
6. ultimate

Task 8:

1. The great variety and complexity of these cells make cancer a difficult disease to fight.
2. Toxic chemicals are used to destroy cancer cells.
3. Because cancer cells can become resistant to chemotherapy.
4. To make chemo- and radiation therapies and our drugs more effective and less toxic.
5. Open

Task 9:

- 1.人们已经描述了 250 多种类型的癌症,在恶性细胞中每种类型的癌症引起不同的细胞变化。
- 2.生物技术公司正在开发新的化疗药物,包括有针对性的治疗。
- 3.因为癌细胞可以变得对化疗有抗性,正在开发新的药物切断癌细胞的源头。
- 4.顺铂会到达脑部,并杀死存在的肿瘤细胞,但 N-乙酰半胱氨酸具有防止该药物在整个身体的其余部分损伤器官的潜能。
- 5.因为她的黑色素细胞的特定基因突变,她完全被用于治疗慢性粒细胞白血病的药物治愈黑色素瘤。她是转移性黑色素瘤首例体验到完全治愈。

Task 10:

1. declared; the secret of life
2. DNA molecules; instructions
3. double helix shape
4. sequence; twins

Task 11:

- 1.必须是这样：你身体中的数以千万计的每一条 DNA 分子都包含一套完整的从化学物质构建成你的指令。
- 2.我们周围的几乎所有东西都是由分子组成，分子是由原子构成，每个分子通常只有很少的原子。
- 3.如果链是直的，它将是几个厘米长。但它必须适应内部的细胞核，它只有千分之几毫米宽。

除了同卵双胞胎，每个人序列略有不同。我们的身体含有多种氨基酸。它们之中的四个组成 DNA 的一部分。它们在一个长链扭曲配对称为双螺旋。这是 DNA。

Task 12: (Open)

Scripts for Task 6:

Teacher: Good morning, please have a seat.

Student: Thank you.

Teacher: Did you have trouble finding the way to our school?

Student: I had no trouble at all getting here.

Teacher: Fine. Well let's get started. Could you tell me about your educational background?

Student: Yes, of course. I'm graduating from Beijing Institute of Technology, majoring in Biomedicine.

Teacher: Can you tell me a little more about your major?

Student: It's an interdisciplinary field and in recent years it has become hotter and hotter. It can be applied in many areas of life.

Teacher: Have you read any articles about your major?

Student: Yes, I have read many articles and I also wrote an article last year and it was recorded by SCI.

Teacher: Thank you very much. We will mail the result to you in five days.

Interviewee: Thank you for interviewing me.

Part V Chinese translation of passages

Passage 1

癌症治疗与生物技术

超过 250 种的癌症已经有描述，并且每种类型的癌症在恶性细胞中引起不同的细胞变化。这些细胞种类的多样性和复杂性，使癌症成为一种难以战胜的病魔。随着我们对遗传学、肿瘤细胞以及免疫系统的理解的增多，更好的疗法将以空前增长的速度被发现。

有毒化学物质被用来摧毁癌细胞。许多化学治疗药物并不是特别针对癌细胞的，所以服用这些药物可能导致显著的副作用。化疗可以缓解癌症的症状，控制恶性肿瘤，或治愈癌症。一些形式的癌症对化疗药物反应并不很好。

生物技术公司正在开发新的化疗药物，包括靶向药物治疗。靶向药物是设计用来攻击癌细胞上的特定标记，以减少药物的副作用。另一个方法是使用附加在化疗药物上的抗体：该抗体搜寻出癌细胞，并将药物直接送到源头。另一个新发展的疗法是使用称为脂质体的脂肪分子将药物递送到肿瘤细胞，这会减少患者经受的副作用的程度。

因为癌细胞可以变得对化疗有抗性，正在开发新的药物关闭癌细胞的泵吸作用。这有助于克服抗药性，可这又可能成为治疗恶性肿瘤时的一个问题。

另一个角度是开发化学防护药物。这些药物可以有助于保护被化疗破坏的器官。化学防护药物的一个例子是 **N-乙酰半胱氨酸**，它能防护免受一种称为顺铂化疗药物的作用。**N-乙酰半胱氨酸**可防止顺铂与细胞结合。由于 **N-乙酰半胱氨酸**不会穿过血脑屏障，所以它可以与顺铂组合使用。顺铂会到达脑部，并杀死那里的肿瘤细胞，但 **N-乙酰半胱氨酸**具有防止该药物在身体的其余部分损伤器官的可能性。

癌症基因组测试

随着治疗方案的不断增加，有更为创新的诊断测试可以识别癌细胞的特异性基因组。一旦研究出某种基因组，就可以选择最适当的治疗：这被称为基因组学。

有了这些测试就使得治疗癌症有了非常个性化的途径。这些测试能够检测出可能对某些化疗药物或其它目标生物剂有反应的特异性突变。

基因组学实际用于治疗的一个例子，是一名有黑色素瘤的年轻女子进入达纳法伯研究所治疗的病例。皮肤癌细胞已经转移：通过利用基因组治疗，研究小组发现，她的黑色素瘤竟然出现了称为 **KIT** 的突变，通常见于慢性粒细胞白血病中，而在黑色素瘤中没有见过。他们选择的治疗不同寻常：他们使用了一种称为格列卫的药物，这实际上是专为治疗慢性粒细胞白血病的，而不是治疗黑色素瘤的。因为她的黑色素细胞的特定的基因突变，却用一种治疗慢性粒细胞白血病的药物治愈了黑色素瘤。她是转移性黑色素瘤首例经历的彻底治愈。

“生物技术是能将一种致命的疾病转化为慢性病的关键，”古巴哈瓦那分子免疫学中心的总干事（**CIM**）奥古斯丁·拉赫·达维拉博士说。“我们的药物使化疗和放射疗法更有效，毒性更低。这将帮助我们实现我们的最终目标：让我们的病人寿命更长，生活质量更好。”

Passage 2

DNA

在 1953 年的一天，两位名叫沃森和克里克的科学家冲进一个安静的剑桥酒馆，并宣称“我们刚刚发现了生命的秘密”。

他们的是发现了。几个月后，他们计算出了创造构成所有生命的化学物质的结构。这个化学物质叫做脱氧核糖核酸，巨大且复杂。

它必须大而复杂：你身体中的数以万计的每一条 DNA 分子都包含一套完整的一个由化学物质构建成的你的指令。

几乎我们周围的一切都是由分子组成的，分子是由原子组成的，通常每个分子只是由几个原子构成。但 DNA 分子却是由大约 2000 亿个原子连接成的一个长链条。如果把这一链条抻直，它的长度将会达到几个厘米。但它必须适应待在细胞核的内部，而细胞核只有几千分之几毫米宽。因此，它得紧紧地盘绕成一个长长的双螺旋形。

所有的生命都是由这个复杂的化学物质 DNA 构成的。除了孪生双胞胎之外，其他每个人的序列略有不同。我们的身体含有多种氨基酸。其中的四种构成 DNA 的一部分。它们在一个长长的称为双螺旋的扭曲链里配对。这就是 DNA。



Unit 5 Biofuel

Part I More information for the unit

Biofuels are fuels produced directly or indirectly from organic material — biomass — including plant materials and animal waste. Bioenergy is energy derived from biofuels. Bioenergy is mainly used in homes, to a lesser extent in industry, while liquid biofuels for transport still play a limited role.

Biofuels can be solid, gaseous or liquid, even though the term is often used in a narrow sense to refer only to liquid biofuels for transport. Biofuels are often divided into three generations. First-generation biofuels or “conventional biofuels” are made from food products such as sugar, starch, or vegetable oil. Any biofuel made from a feedstock that can also be consumed as a human food is considered a first-generation biofuel. Second generation biofuels, also known as “advanced biofuels”, are fuels that can be manufactured from various types of biomass. No second-generation biofuel is also a food crop, though certain food products can become second generation fuels when they are no longer useful for consumption. Some people refer to any biofuel derived from algae as third generation biofuels. These biofuels are given their own separate class because of their unique production mechanism and their potential to mitigate most of the drawbacks of 1st and 2nd generation biofuels.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. Cars were originally designed to run on ethanol which is another word for alcohol made from grains when Henry Ford made his first Model T. (Para.1)

Explanation: 此句包含一个 **which** 引导的限制性定语从句和一个 **when** 引导的时间状语从句。主句为 **Cars were originally designed to run on ethanol**。定语从句的先行词为 **ethanol**, **made from grains** 是过去分词短语作后置定语, 修饰 **alcohol**。此句的中文意思是: 当亨利·福特生产造出其首款 T 型汽车时, 汽车最初被其原始设计为靠乙醇运行。乙醇是就是“用谷物粮食制成的酒精”的另一种说法。

2. Nowadays, the race is on to develop ethanol, biodiesel, and biojet fuel, three main types of vehicle biofuel since transportation globally accounts for 25% of energy demand and nearly 62% of oil consumed. (Para.2)

Explanation: on 在这里是副词，is on 做 the race 的系表结构谓语。不定式短语 to develop ethanol, biodiesel, and biojet fuel 作定语修饰主语 the race，主句原语序应为 The race to develop ethanol, biodiesel, and biojet fuel is on。由于主语部分（含主语+后置定语部分）过长，而谓语部分 is on 又过短，故根据语义尾重原则，将定语挪到表语之后。three main types of vehicle biofuel 是 ethanol, biodiesel, and biojet fuel 的同位语。Since 引导的原因状语从句修饰主句，解释“为何竞争的焦点在这三种生物燃料上”。此句的中文意思是：现如今，以开发乙醇、生物柴油和生物航空燃料这三类最主要的交通工具生物燃料为焦点的竞争正如火如荼地进行，因为交通运输占全球能源需求的 25% 和全球耗油量的几乎 62% 左右。

3. Supporters say that they are firstly a renewable energy source, unlike fossil fuels, that are not considered recyclable because it takes such millions of years to form that we could use all of them much faster than they could be produced again. (Para.3)

Explanation: 此句的基本结构是开头的 Supporters say that 宾语从句。而 that 宾语从句的结构却较为复杂。unlike fossil fuels 是介词短语作比较状语，而后接的 that 引导的是限制性定语从句（that are not considered recyclable），修饰前面 that 从句中的 a renewable energy source。because 引导原因状语从句，故放在句尾。原因状语从句中包含 such ... that ...（如此...以致），引出结果状语从句。注意本句共有三个 that 引导的从句，分别作 say 的宾语，fossil fuels 的定语和 it takes millions of years to form 的结果状语。此句的中文意思是：此句的中文意思是：支持者生物燃料的拥护者称生物燃料首先是可再生能源，不像化石燃料被认为是无法循环利用的燃料，因为化石燃料需要数百万年才能形成，以至于我们使用消耗它们的速度远远快于它们再次产生再生的速度。

4. Renewable energy, like biofuels, hydroelectric, wind, and solar, won't be used up soon but a "green" energy is one that is also good for the earth because it does not harm ecosystems, contribute to acid rain, or worsen global warming. (Para.4)

Explanation: 此句的基本构架为由 but 连接的并列复合句。第一个分句为简

单句，其主谓语为 **Renewable energy won't be used up**。其中 **like biofuels, hydroelectric, wind, and solar** 为介词短语作同位语，用来列举分句主语 **Renewable energy** 的具体示例。第二个分句为复合句，主句为 **a “green” energy is one**，其后由 **that** 引导的限制性定语从句修饰其先行词为 **one**，（只能用 **that** 不能用 **which** 引导），**because** 引导的是原因状语从句。此句的中文意思是：尽管可再生能源诸如生物燃料、水电能源、风能、太阳能等不会很快耗尽，但绿色能源还对地球有益，因为它不会损害生态系统，也不会造成酸雨或加剧全球变暖。

5. In addition, plenty of water is needed to irrigate biofuel crops properly, which is likely to cause a shortage of local water resources. (Para.5)

Explanation: 此句是一个主从复合句。主句为 **plenty of water is needed**。其后的 **to irrigate biofuel crops properly** 是动词不定式短语作目的状语。**which** 引导的非限制性定语从句指代整个主句的含义，故主从句之间用逗号隔开。**Be likely to** 表示“倾向于，很可能”；**be short of** 表示“不足，缺乏”，**shortage** 是 **short** 的名词形式，作 **cause** 的宾语。此句的中文意思是：此外，合理灌溉生物燃料作物需要大量用水，这可能会导致当地水资源的短缺。

Passage 2

1. The company identified “green diesel”, a renewable fuel used in ground transportation, as a significant new source of sustainable jet fuel that would emit at least 50% less carbon dioxide than fossil fuel over its lifecycle. (Para.2)

Explanation: 此句的结构比较复杂。主句为 **The company identified “green diesel” as a significant new source of sustainable jet fuel**。**identify ... as ...** 的意思是“把...认为是...”。其中 **a renewable fuel** 是 **green diesel** 的同位语，其后的 **used in ground transportation** 是过去分词短语做后置定语，修饰 **a renewable fuel**。**That** 引导的是限制性定语从句，先行词是 **sustainable jet fuel**，**that** 在从句中充当主语。此句的中文意思：波音公司将“绿色柴油”——一种用于地面交通的可再生燃料——认定为一种重要的新型可持续的航空燃料来源。这种燃料在其使用过程中排放的二氧化碳量比化石燃料至少低 50%。

2. Boeing's position, and that of many airlines we work with, is that aviation biofuel must be produced sustainably, meeting standards for environmental, economic and social benefits. (Para.5)

Explanation: 此句的主语有两个: Boeing's position 和由 and 引出的附加主语 that (of many airlines), that 指代做主的名词 position。附加成分, 包括附加主语, 前后要用逗号分开。句中的谓语动词的形式 is 只受其真正主语 Boeing's position 支配。能引出附加成分类似连接词语还有 as well as, along with, together with 等。其后的 we work with 为省略关系代词 (which/that) 的定语从句。第二个 that 引导的从句在句子中作表语, 为表语从句。其后的 meeting standards for...为现在分词短语作连带说明状语, 如说明目的、结果等。此句的中文意思: 波音公司当前的定位, 以及与我们合作的许多航空公司的定位, 都是必须生产可持续的航空生物燃料, 来确保符合环境效益、经济效益和社会效益的标准。

Part III Examples with some of the key words and expressions

Passage 1

1. consume v. 消耗, 耗费 (燃料, 能量, 时间等)

e.g. The electricity industry consumes large amounts of fossil fuel.

电力工业消耗大量的化石燃料。

Energy-efficient fridges consume less electricity than traditional models.

高能效冰箱比传统型号耗电少。

time-consuming 耗时的 energy-consuming 耗能的

2. account (for) v. 占 (数量, 比例); 解释, 说明

e.g. Students account for the vast majority of their customers.

他们的顾客绝大多数是学生。

How do you account for our company's high staff turnover?

你怎么解释公司这么高的人员流动率?

3. exception n. 例外

e.g. It's been very hot this month, but today is an exception.

这个月一直很热，但今天是个例外。

There are always a lot of exceptions to grammar rules.

语法规则总是有很多例外。

4. pump v. 泵吸，抽运，输送 n. 泵

e.g. The heart pumps blood around the body.

心脏把血液输送至全身。

The engine is used for pumping water out of the mine.

这台发动机是用来从矿井中抽水的。

5. diminish v. 减少，降低，减弱

e.g. The world's resources are rapidly diminishing.

世界资源正在迅速减少。

The drug's side-effects should diminish over time.

该药物的副作用应该会随着时间而消减。

6. shortage n. 不足，短缺

e.g. There's a shortage of food and shelter in the refugee camps.

难民营里缺少食物和住处。

The long hot summer has led to serious water shortages.

漫长炎热的夏天已导致严重的水资源短缺。

7. silver bullet 良方，高招

e.g. Some argue that carbon pricing is not a silver bullet for dealing with climate change.

一些人认为碳的定价不是应对气候变化的良策。

No silver bullet can make the world safe from terrorism.

没有什么良方可以让世界免除恐怖主义的威胁。

8. alternative a. 供替代的 n. 可供选择替代选项

e.g. Do you have an alternative solution to this problem?

这个问题你有没有别的解决办法？

Doctors these days tend to be more open-minded about alternative medicine.

如今医生对另一种医疗的态度趋于更加开放。

Passage 2

1. **blend** n. 混合品，混合物；融合 v. 混合，融合
e.g. The building's design is an interesting blend of traditionalism and modernism.
这栋建筑的设计是传统和现代有趣融合。
She blends psychology and crime in her new novel.
她的新小说融合了心理学和犯罪这两个要素。
2. **initiative** n. 新方案，举措；倡议
e.g. John will be responsible for our new marketing initiative.
约翰将会负责我们的新营销计划。
The peace initiative was welcomed by both sides.
和平倡议受到双方的欢迎。
3. **sustainable** a. 可持续的；不破坏生态平衡的
e.g. To achieve sustainable economic growth, society must provide quality jobs that stimulate economy while not harming the environment
为实现可持续经济增长，社会必须提供高质量的就业机会来刺激经济，同时不危害环境。
Our ultimate goal should be to create a sustainable world where nothing is wasted.
我们的最终目标应该是建立一个绝无浪费的可持续发展的世界。
4. **identify** v. 确定，鉴定；认出，识别
e.g. The research will be used to identify training needs.
这项研究将用于确定培训需求。
Even the smallest baby can identify its mother by her voice.
即使是最年幼的婴儿也能根据声音识别自己的母亲。
5. **emit** v. 发射（光，热，声音，气等）
e.g. It is now unlawful for factories to emit black smoke into the air.
现在工厂向大气中排放黑烟是违法的。
Fireflies emit light but not heat.
萤火虫发光但不放热。
6. **in bulk** 批量，大批；散装

e.g. The restaurant buys rice and flour in bulk.

这家餐厅大量购买米和面。

Fresh orange juice is shipped from Florida in bulk.

新鲜橙汁从佛罗里达州散装运输过来。

7. capacity n. 生产力；容量；能力

e.g. The generators each has a capacity of 1,000 kilowatts.

发电机每台都有 1000 千瓦的发电能力。

The fuel tank has a capacity of 50 liters.

这个燃油箱的容量为 50 公升。

Part IV Key to exercises and scripts for listening

Task 5:

(Students may use their own words as long as they get the general idea.)

1. Understanding your products' features allows you to present their benefits accurately and persuasively.
2. Customers are more likely to trust sales people who show confidence in themselves and in what they are selling.
3. Various sources of information can be used to learn about your products or services, such as internal sales records, product literature like brochures and catalogues, sales training programs, feedback from customers, and industry publications.
4. Successful salespeople know all of their products' features and skillfully turn these features into benefits for their customers.

Task 6:

1. rewarding
2. shared with you
3. don't hesitate to
4. checked out
5. see us off

Task 7:

1. ethanol, biodiesel, biojet fuel
2. Fossil fuels
3. renewable energy source
4. greenhouse gases
5. fuel crops
6. alternative energy source

Task 8:

1. It is important to develop vehicle biofuels because transportation globally accounts for 25% of energy demand and nearly 62% of oil consumed.
2. Biofuels are considered to be renewable because they are made of plants or animal waste, which can be produced year after year through farming practices. This enables us to replace used biofuel easily over a very short period of time.
3. Biofuels are not green energy sources. A green energy does not harm ecosystems, contribute to acid rain, or worsen global warming, but biofuels give out greenhouse gases into the air.
- 4.

Advantages	Disadvantages
a. Unlike fossil fuels, biofuels are a renewable energy source. b. Biofuels have the potential to be far less expensive. c. Agro-fuels are locally produced, which will make lots of contribution to the native agricultural industry on a large scale.	a. Biofuels give out greenhouse gases into the air, which may worsen global warming. b. Plenty of water is needed to irrigate biofuel crops properly, which is likely to cause a shortage of local water resources. c. Using valuable cropland to grow fuel crops could have an impact on food supply.

5. (Open)

Task 9:

1. efficient
2. diminish
3. using up
4. alternative
5. accounts for
6. give out
7. consume
8. recyclable
9. silver bullet
10. exception

Task 10:

1. 现如今，以开发乙醇、生物柴油和生物航空燃料这三类最主要的交通工具生物燃料为焦点的竞争正如火如荼地进行，因为交通运输占据全球能源需求的 25% 和全球耗油量的几乎 62% 左右。
2. 生物燃料的拥护者称生物燃料首先是可再生能源，不像化石燃料被认为是无法循环利用的燃料，因为化石燃料需要数百万年才能形成，以至于我们消耗它们的速度远远快于它们再生的速度。

3. 随着时间的推移，石油供应将减少。这势必会导致油价上涨，因为我们从地面抽送化石燃料的能力在降低。

4. 尽管可再生能源诸如生物燃料、水电能源、风能、太阳能等，不会很快耗尽，但绿色能源还对地球有益，因为它不会损害生态系统，也不会造成酸雨或加剧全球变暖。

5. 此外，合理灌溉生物燃料作物需要大量用水，这可能会导致当地水资源的短缺。

Task 11:

1. sustainable
2. capacity
3. competitive
4. promise
5. feedstocks

Task 12:

1. 航空生物燃料 / sustainable fuels
2. 生命周期 / carbon dioxide emissions
3. 大批量 / production capacity
4. 动物脂肪 / cooking oil
5. 固体废物 / economic benefits
6. 取得突破性进展 / meet standards

Task 13:

1. place an order
2. inclusive of all taxes
3. Payment in full
4. long-term business relationship
5. purchase order

Scripts for Task 5:

Product knowledge is an important sales skill. Understanding your products' features allows you to present their benefits accurately and persuasively.

Get to know your products or services

Customers are more likely to trust sales people who show confidence in themselves and in what they are selling. You can build this confidence by increasing your knowledge of your products or services. Use various sources of information to learn about your products or services, such as internal sales records, product literature like brochures and catalogues, sales training programs, feedback from customers, and industry publications.

Turn product features into benefits

Successful salespeople know all of their products' features and skillfully turn these features into benefits for their customers. As you engage customers, you can use your knowledge to lead your customer through the sales process, and make their experience an enjoyable one that they'll want to revisit.

Scripts for Task 6:

Receptionist: Well, that's the end of the tour. We've covered just about everything there is to see. Thank you for coming and I hope you enjoyed your time today.

Visitor: We found this visit quite rewarding. Thank you for inviting us and spending the afternoon with us.

Receptionist: It was our pleasure. Do you have any questions about the things we shared with you during our factory tour?

Visitor: No, your explanations were detailed enough.

Receptionist: Well, if you think of any questions sometime later, please don't hesitate to e-mail us. Here's my business card.

Visitor: Thanks! I'm sure we will keep in touch.

Receptionist: Great! So are you headed back to the hotel from here? Do you need me to call a taxi?

Visitor: No, that won't be necessary. We've already checked out from the hotel so that we can catch an early flight. Mr. Du will see us off to the airport.

Part V Chinese translation of passages

Passage 1

生物燃料

主要从生长在土地上的植物中获取能源的任何类型的燃料都被称为生物燃料。尽管许多人认为使用植物产生能量是一项近期的发展成果，而事实上这是最古老的能量来源。例如，多少世纪以来就是靠焚烧木材来取暖和烧饭等维持基本生计的。当亨利·福特造出其首款 T 型汽车时，其原始设计靠乙醇运行。乙醇就是“用粮食制成的酒精”的另一种说法。

现如今，以开发乙醇、生物柴油和生物航空燃料这三类最主要的交通工具生物燃料为焦点的竞争正如火如荼地进行，因为交通运输占据全球能源需求的 25%

和全球耗油量的几乎 62%。一般来说,乙醇用于燃烧汽油的发动机,比如大部分汽车。生物柴油则用于燃烧柴油的发动机,比如大型卡车和拖拉机。更为纯净的生物航空燃料则用于飞机行业。

当然,每种燃料都有其积极和消极的方面。生物燃料也不例外。生物燃料的拥护者称生物燃料首先是可再生能源,不像化石燃料被认为是无法循环利用的燃料,因为化石燃料需要数百万年才能形成,以至于我们消耗它们的速度远远快于它们再生的速度。另一方面,生物燃料由植物或动物粪便制成,可年复一年地通过农耕实践产生。这对我们而言是一个十分有效的可再生步骤,能够在非常短的时间内轻而易举地替换使用过的生物燃料。

拥护者还指出,生物燃料有潜力实现价格更加低廉。随着时间的推移,石油供应将减少。这势必会导致油价上涨,因为我们从地下抽取化石燃料的能力在降低。同时,农业燃料是在当地生产,这将为大范围的天然农业产业做出大量贡献。

尽管这些能源有许多优点,但它们也存在许多缺点。首先,有注意到“可再生”能源并不意味着是“绿色”能源。尽管可再生能源诸如生物燃料、水电能源、风能、太阳能等不会很快耗尽,但绿色能源还对地球有益,因为它不会损害生态系统,也不会造成酸雨或加剧全球变暖。太阳能是一种绿色能源,而生物燃料则属于可再生能源,因为它们向空气中释放温室气体。此外,合理灌溉生物燃料作物需要大量用水,这可能会导致当地水资源的短缺。另一个令人担忧的问题是用宝贵的农田种植燃料作物可能会对食品供应产生影响。

总的来说,生物燃料并非解决世界能源问题的良方。实际上,它们只是一种可靠的可替代能源,值得我们更深入地探索。

Passage 2

新型航空燃料

自从美国于 2011 年批准使用航空生物燃料以来,许多商务航班已经采用传统燃料和生物燃料的混合物作为动力。到目前为止,美国飞机制造商波音公司已宣布多项创意来生产可持续航空生物燃料。

波音公司将“绿色柴油”——一种用于地面交通的可再生燃料——认定为一种重要的新型可持续的航空燃料来源。这种燃料在其使用过程中排放的二氧化碳量比化石燃料至少低 50%。航空运输行业一直面临着减少二氧化碳排放的巨大压力。2012 年,该行业共计产生了 6.89 亿吨二氧化碳,约占全球总量的 2%。对波音公司而言,绿色柴油的一个重要优势是已进入大批量生产,全球生产能力为 8 亿加仑。需要注意的是,绿色柴油不同于生物柴油,虽然二者都是由相同的来源即植物油和动物脂肪制成。生物柴油在加工过程中产生不同类型的分子,且不能用作喷气燃料。选择绿色柴油的另一大理由是,该新生物燃料的成本相比化石喷气燃料而言更具竞争力。

波音公司及其合作伙伴在研究一种称为盐生植物的沙漠植物上取得了突破性进展。根据研究结果,这种沙漠植物相比其他许多原料可以更加有效地制成生物燃料。“作为飞机和其他交通工具的可再生燃料来源,盐生植物表现出的前景比我们预期的更大。”研究小组主任亚历杭德罗·里奥斯博士如是说。波音正在研究的生物燃料原料包括废弃食用油、剩余玉米秸秆、剩余木制品、甘蔗、藻类和固体废物。

“波音公司当前的定位，以及与我们合作的许多航空公司的定位，都是必须生产可持续的航空生物燃料，来确保符合环境效益、经济效益和社会效益的标准。”波音公司环境沟通团队的杰西卡·科瓦尔如此说。



Unit 6 Enzymes and Microbes

Part I More information for this unit

Industrial applications of enzymes

Enzymes are used in the chemical industry and other industrial applications when extremely specific catalysts are required.

Enzymes in general are limited in the number of reactions they have evolved to catalyze and also by their lack of stability in organic solvents and at high temperatures. As a consequence, protein engineering is an active area of research and involves attempts to create new enzymes with novel properties, either through rational design or in vitro evolution. These efforts have begun to be successful, and a few enzymes have now been designed “from scratch” to catalyze reactions that do not occur in nature.

Part II Explanation of difficult sentences in reading

Passage 1

1. At the beginning of the process, the molecules are called substrates and the enzyme changes these molecules into products, which are different kinds of molecules.

Explanation: 本句包含由 and 引导的 2 个并列分句和一个有 which 引导的定语从句，which 从句修饰先行词 products。本句中文含义为：在过程开始时分子被称为底物，酶将这些分子转换成不同种类的分子，称为产物。

2. Enzymes are in need so as to sustain life to almost all metabolic processes.

Explanation: 本句的谓语是系表结构（系词+介词短语 are in need）。so as 引导动词不定式做目的状语。本句中文含义为：几乎所有的代谢过程都需要酶来维持生命。

3. It is promising to improve our environment with enzymatic methods in the pulp and paper industry.

Explanation: 本句中的 it 为形式主语，真正的主语为 to 引导的不定时短语 to improve our environment。本句中文含义为：在制浆和造纸行业采用酶解工艺对改善环境是大有前途的。

4. Some of the enzymes are produced for commercial use, for instance, to produce antibiotics.

Explanation: 本句中，for instance 用来举例，其前后经常用逗号翻开。中文含义为：一些酶是为商业用途生产的，例如为了生产抗生素。

Passage 2

1. The first realization that microorganisms were involved in food production was in 1837 when French biologist Louis Pasteur discovered the role of yeast for the first time in an alcoholic fermentation.

Explanation: 此句的基本结构框架为：主句为 The first realization （主语）was in 1837 （系表谓语）。that 从句为同位语，解释 realization 的内容。when 引导时间状语从句，修饰 in 1837。此句的中文意思是：人们第一次认识到微生物参与食品生产是在 1837 年，那时法国生物学家路易·巴斯德在酒精发酵过程中首次发现酵母菌的存在。

2. Given the right conditions, correct temperature and moisture, the bacteria are able to ferment the milk sugar, producing lactic acid.

Explanation: 句中 given 为介词，含义为（有了...条件），介词短语 given the right conditions 在句中作条件状语，意思为“有了...条件”。此句的中文意思是：如果给予乳酸菌适宜的环境、温度和湿度，它们能够发酵乳糖，产生乳

酸。

3. The gas gets trapped in the protein of the dough and causes it to rise, while the alcohol is converted to compounds that impart taste to the bread as it is baked in the oven.

Explanation: while 可作并列连词，表示 The gas gets trapped in the protein of the dough 和 the alcohol is converted to compounds 两个行为动作的对照呼应发生，常译为“而，同时”等。That 引导定语从句 impart taste to the bread，修饰 compounds。此句的中文意思是：在烘焙面包的过程中，面团里蛋白质的二氧化碳受热膨胀散发，导致面团体积不断膨大，而酒精转化成气体混合物给予面包香喷喷的味道。

Part III Examples with some of the key words and expressions

Passage 1

1. reaction n. 反应; 反作用力 e.g. The ambassador was clearly disconcerted by the British reaction.

显然，英国的反应让这位大使很不安。

2. determine

v. 决定，确定

e.g. These voters often determine the outcome of statewide elections.

这些选民往往决定全州大选的结果。

3. commercial

a. 商业的; 贸易的 n. 电视广告;

e.g. British Rail has indeed become more commercial over the past decade.

过去 10 年，英国铁路实际上变得更加商业化。

4. efficient

a. 有效率的; 能干的

e.g. Look closely at how you manage your time, and compare your activities to someone you know who is efficient, and ask for feedback.

你仔细看看你是怎样管理自己的时间的, 再将你的活动和一些工作更有效率的人对比一下, 询问一下反馈信息。

5. environmental-friendly 环保友好的;

e.g. Standing by the wall which is built by the recycled materials, I feel this garden is really environmental-friendly.

站在用再生材料建成的这座墙的边上, 我感到这座花园真的很环保。

6. highlight

n. 强光部份; 最精彩的部分

v. 强调, 突出

e.g. This is the relevant map with the route highlighted in yellow. 这是一幅相关的地图, 用黄色标出了路线。

7. attain

v. 达到, 获得

e.g. Jim is halfway to attaining his pilot's license. 吉姆距离其获取飞行员资格证书还有半程路要走。

Passage 2

1. be involved in 卷入; 涉及

e.g. She didn't want to be involved in trouble.

她不想卷入纠纷。

He was involved in working out a plan.

他专心致志地制订计划。

2. ferment v. 发酵

e.g. To serve the needs of bakers, manufacturers ferment the yeast to produce a more concentrated product.

为了满足面包店主的需要，制造商将酵母发酵，以生产出浓度更高的产品。

When wine is fermented it gives off bubbles of gas.

酒发酵时会放出气泡。

4. homogenize v. 使类同；使...均质

e.g. Homogenize the main ingredients.

拌匀主要食材。

In spite of endless talk of differences, American society is an amazing machine for homogenizing people.

尽管不断谈论差异，美国社会仍然是一部同化人的神奇机器。

5. coagulate v. 凝结；凝固

e.g. The blood coagulates to stop wounds bleeding.

血液凝结，使伤口不再出血。

As the egg whites cook, they coagulate and rise to the surface.

蛋白一煮就会凝结并浮出水面。

6. be beneficial to 有益于

e.g. It can be beneficial to share your feelings with someone you trust.

向自己信任的人倾诉感情可能是很有益处的。

I hope your holiday will be beneficial to you.

我希望你的假期会对你有益。

7. beverage n. 饮料

e.g. It is said that college students will spend \$4.2 billion annually on alcoholic beverages.

据说大学生每年在酒精饮品上会消费 42 亿美元。

Alcoholic beverages are served in the hotel lounge.

酒店的公共休息室供应酒精饮料。

8. crush v. 压碎, 镇压

e.g. Put both vegetables into a bowl and crush with a potato masher.

把这两样蔬菜放进一个碗里, 然后用捣土豆器把它们捣碎。

The military operation was the first step in a plan uprising.

军事行动是镇压暴动计划的第一步。

9. be converted to 转化成

e.g. He converted his barns into cottages for weekenders.

他把他的谷仓改造成了供周末旅行者居住的小屋。

She quickly converted me to the joys of cross-country skiing.

她很快就让我变成了越野滑雪迷。

10. aerobic a. 需氧的; 有氧的

e.g. Skipping is one of the most enjoyable aerobic activities.

跳绳是最有趣味的有氧健身运动之一。

Walking, done in the right way, is a form of aerobic exercise.

如果方法恰当, 走步也是一种有氧健身运动。

Part IV Key to exercises and scripts for listening

Task 5:

1. Fruit enzymes have generated a lot of interest.
2. Enzymes are cheap, easy to make and extremely healthy.
3. They are responsible for all the biological activities in human cells.

4. They are extremely healthy!
5. To aid digestion and provide energy.
6. It helps the body digest, absorb and utilize nutrients.

Task 6:

Knife

Brown sugar

skin

the tools

fermentation

Task 7:

1. Biochemical reaction
2. have different impacts on
3. break down
4. environmental pollution
5. environmental-friendly one
6. promising

Task8:

1. Enzymes
2. washing powder
3. the pulp and paper industry
4. deinking
5. emphasis, highlight

Task9:

Open

Task 10:

1. 酶通过降低其活化能加速化学反应。
2. 代谢途径由细胞内酶的构造决定。
3. 一些酶是为商业用途生产的，例如为了生产抗生素。
4. 肉品嫩化剂的酶有助于将蛋白质分解成小分子，使肉品更容易咀嚼。
5. 在制浆和造纸行业采用酶解工艺对改善环境是大有前途的。

Task 11

1. alcoholic fermentation
2. lactic acid
3. health attributes
4. aid digestion
5. alcohol beverages
6. is converted to

Task 12:

1. 酒精发酵/be involved in
2. 全世界的生产商/ lactic acid
3. 帮助消化/milk protein
4. 健康属性/promote good health
5. 益生菌酸奶/ alcohol beverages
6. 二氧化碳/be cleaned of
7. 有助于/be converted to
8. 动态氧化/get trapped in

Task 13:

1. with regard to
2. No sooner...than...
3. expect
4. spoiled yogurt
5. appreciate the refund
6. look into the matter
7. tarnishes the company's reputation

Task 14: (open)

Script for Task 5

All these years fruit enzymes have generated a lot of interest. And it is a good thing because enzymes are cheap, easy to make and, to be more important, they are extremely healthy!

So what are actually enzymes? To make it simple, enzymes are protein molecules which shoulder the responsibility for all biological activities in the human cells.

Then what is the main function of enzymes? To aid digestion and provide energy. Consuming enzymes helps the body digest, absorb and utilize nutrients.

Script for Task 6

Good evening, ladies and gentlemen. Today I'll show you how to make your own fruit enzymes.

These are the things you need to prepare:

Fresh fruits

Glass container with cover

Knife and cutting board

Brown sugar, rock sugar or honey

Here are the easy steps you can follow:

Clean the fruits and peel the skin if desired;

Clean the tools;

Use a 3:1 ratio (3 parts of fruits and 1 part of sugar/honey);

Shake the container every 3-4 days for the first 2 weeks for an even fermentation;

Harvesting & Storing;

Finally you can consume your own healthy enzymes!

Part V Chinese translation of passages

Passage 1

酶

酶是一种宏观分子的生物催化剂，能催化 5,000 多种生化反应。酶通过降低其活化能加速化学反应。在过程开始时，分子被称为底物，酶将这些分子转换成不同种类的分子，称为产物。几乎所有的代谢过程都需要酶来维持生命。代谢途径由细胞内酶的构造决定。

分子对酶有不同的影响：抑制剂能降低酶的活性；在毒药和药物中就能发现酶抑制剂。此外，一些活性剂有助于增加活性。

一些酶是为商业用途生产的，例如为了生产抗生素。人们还用酶来生产洗衣粉，使衣服上的蛋白质、淀粉或脂肪的污渍容易分解。不同的污渍需要不同的酶来分解。肉品嫩化剂的酶有助于将蛋白质分解成小分子，使肉品更容易咀嚼。

酶广泛应用于纸浆和造纸工业，因其消耗大量的能源和化学物质而被认为严重加剧环境污染。与此同时，酶的加工生产却又为此行业提供了向环境友好型转变的机会。

科学家们针对酶在制浆造纸工业中应用的环境影响做了许多研究。结果表明，化石的能源消耗及其对环境的影响，比如酸化，全球变暖，富营养化，雾霾形成等，与用于漂白、催化、精炼、树脂障碍控制、脱墨等相比影响很小。

与化学剂相比，酶的效力更大，因为使用小量酶的效能与使用大剂量的化学剂有同样的功效。此外，酶解工艺比传统工艺消耗化石能源要少。尽管存在不确定性和变化，除脱墨工艺外，数据质量评估和敏感性分析表明研究结果对所有其他工艺都有效。在制浆和造纸行业采用酶解工艺对改善环境是大有前途的。我们需要更加强调酶解法并突出它在工业和污染控制中的应用。特别对政府机构尤其如此，如果我们要在市场上更多推广酶解法以取得生物创新的环境效益。

Passage 2

微生物在食品和饮料行业中的应用

微生物有机体也称作微生物，是一种极其微小的生物有机体，人们仅仅能在显微镜下观察到它。微生物主要包含三大类：细菌、酵母菌和真菌等。人们第一次认识到食品生产涉及到微生物是在 1837 年，当时法国生物学家路易·巴斯德在酒精发酵过程中首次发现酵母的作用。如今全世界的食品生产商通常都使用酵母和细菌在可控的环境下生产各种各样的更好更安全的食品，如面包、红酒、酸奶和奶酪。

微生物和酸奶

酸奶是通过乳酸菌发酵产生的。首先把牛奶进行热处理，使其受热均匀，然后冷却。给予乳酸菌适宜的环境、温度和湿度，它们就能够使牛奶中的乳糖发酵，产生乳酸。随着乳酸中酸度的上升，牛奶蛋白将会凝固，成为酸奶。

用不同的微生物将牛奶发酵还会有机会研发口味、质地、黏稠度和健康属性多样的各种酸奶产品：活性酸奶含有依然存活但对人体无害的活性细菌；益生菌酸奶包含的益生类微生物应该有助于身体健康；还有生物酸奶，以更温润平滑的口感闻名，已证明有助消化和增进健康。

微生物和红酒

酒精饮料的生产过程也涉及微生物的积极参与：这些微生物大都是酵母菌，它们将各种来源的糖发酵成二氧化碳和酒精的最终产品。以红酒为例：首先要清理掉葡萄枝叶，并把葡萄压榨成发酵所需的葡萄汁。用于发酵的酵母菌会在葡萄上或在其周围生长出一层薄膜，致使所酿制的红酒味道和香气发生令人期待的改变。

微生物和面包

酵母菌通过发酵葡萄汁中的糖分产生酒精和二氧化碳气泡，同样有助于改善面包的质地和口感。在烘烤面包的过程中，这些气泡困积在面团的蛋白质里引起面团膨胀，而酒精则转化成混合物赋予面包以香味。因此面包制作是一个动态氧化过程，与酿造葡萄酒产生酒精不同，面团发酵后的主要产品是二氧化碳和水。

Unit 7 Sales and Services

Part I More information for the unit

Sales is an activity related to selling or the amounts of goods or services sold in a given time period. The seller or the provider of the goods or services completes a sale in response to an acquisition, appropriation, requisition or a direct interaction with the buyer at the point of sale. There is a passing of title (property or ownership) to the item(s) sold, and the settlement of a price on which agreement is reached so that transfer of ownership of the item(s) will occur. The seller, not the purchaser generally executes the sale and it may be completed prior to the obligation of payment.

The right product at the right time with the right amounts of cargo to reach the customer intact is the principle of a logistics system, where customer service is essential. Customer service involves nearly all departments of the company. From the logistics point of view, customer service is often judged from four aspects: time, reliability, communication, and convenience.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. Biological products have been influencing the European food market in the last decade.

Explanation: 此句谓语时态是现在完成进行时，即 **have been doing**，表示动作从某一时间开始，一直持续到现在，或者刚刚终止，或者可能仍然要继续下去。此句的中文意思是：近十年以来，生物产品正在影响着欧洲的食品市场。

2. Biological products are distributed in different kinds of sales.

Explanation: 此句是一般现在时被动语态的使用，即由 **be+V-ed** 构成。此句的中文意思是：生物产品通过各种各样方式进行销售。

3. Because of their small size and their limited number, they serve a small part of the market. **Explanation:** **because of** 是介词，故后面接名词或动名词，引出原因状语。此句的中文意思是：由于规模小，数量有限，他们只能供应一小部分市场。

4. In recent years, most of the people have become willing to use biological

products.

Explanation: “in recent years”是提示使用现在完成时或过去时的明显标志，因此此句使用了现在完成时 **have become**。还要注意 **become** 后面要接名词或形容词等作表语，词组 **become/be willing to** 的含义是“愿意使用”。此句的中文意思是：最近几年，多数人开始愿意使用生物产品。

Passage 2

1. Nestlé was only a *workshop* which produced baby food at that time.

Explanation: 这是一个复合句，由 **which** 引导的限定性定语从句修饰其先行词 **workshop**，关联词 **which** 在从句中做主语。此句的中文意思是：雀巢只是一个生产婴儿食品的小车间。

2. Nestlé company uses a special customer questionnaire survey so as to ensure the quality of the products and customers' *reflection*

Explanation: **so as to ensure** 是“为了确保”的意思，词组 **so as to** 的含义是“以便；以致”，表目的。此句的中文意思是：雀巢公司使用特有的客户问卷调查以保障产品质量和获得客户反馈。

Part III Examples with some of the key words and expressions

Passage 1

1. demand (for) : n. 对...的需求

e.g. Extensive advertising can cause a factitious demand for an article.

大规模的广告宣传能引起对某一商品的虚假需求。

This massive investment indicates that there is demand for virtualization of resources inside the cloud.

这样巨大的投资表明，对云中资源的虚拟化存在着巨大的需求。

2. be famous for: 因...而著名

e.g. I don't want to be famous for this, the blogger wrote.

博客作者写道，我不想借此出名。

This guy should be famous for scoring the first goal of the 2010 World Cup.

这位球员会因为打进了 2010 南非世界杯第一个进球而成名。

3. depend on: v. 依赖, 依靠

e.g. My wife and daughter depend on me for their living.

我妻子女儿靠我生活。

I depend on my pen for a living.

我靠写作为生。

4.in order to: 为了

e.g. In order to compass our object we must work hard.

为了达到我们的目标, 我们必须努力工作。

He polished off his work in order to see his girlfriend.

为了去见女朋友, 他匆忙地做完手头的工作。

5. compare (with) v: 与...相比

e.g. The more recent conifer plantations cannot yet compare with the old woodlands.

年代较近的针叶树林场还比不上年代久远的林场。

How does your new house compare with your old one?

你的新房子和你的旧房子比起来怎样?

6. in this way: 用这种方法

e.g. Only in this way can you solve this problem.

只有用这种方法你才能解决这个难题。

So you should not manually enable them in this way.

所以, 不应该用这种方法手动启用它们。

7. attitude (towards) n.: 对...的态度

e.g. Her attitude towards this matter coincides with mine.

她对这件事情的态度和我的一致。

He took up a compromising attitude towards the question.

他对这个问题采取了妥协的态度。

Passage 2

1. locate: v. 位于

e.g. Try to locate exactly where the smells are entering the room.

找找看气味具体是从什么地方散入房间的。

We've simply been unable to locate him.

我们就是没办法找到他。

2. output: n. 产量

e.g. There was a slackening of western output during the 1930s.

20 世纪 30 年代西部的产出有所减少。

Government statistics show the largest drop in industrial output for ten years.

政府统计数据显示这是 10 年来工业产量最大幅度的滑坡。

3. apply (to): v. 适用

e.g. Find out ahead of time what regulations apply to your situation.

提前搞清楚什么规章适用于你的情况。

Similar arrangements apply to students who are ordinarily resident in Scotland.

类似的安排适用于长期居住在苏格兰的学生。

4. so as to: 以便, 为了

e.g. He inclined forward so as to hear more clearly.

他向前倾斜着身体, 以便听得更清楚些。

He interacted closely with us so as to finish the difficult task.

他与我们紧密配合以完成这项艰难的任务。

5. in case of: 以防万一

e.g. She had had the foresight to prepare herself financially in case of an accident.

她有先见之明，经济上作了准备以防万一发生事故。

Put the bottle in a plastic bag in case of spillage.

把瓶子装在塑料袋里，以免洒得到处都是。

6. respond (to): v. 对...有效，服务于

e.g. .Some cases of arthritis respond to a gluten-free diet.

无麸质饮食对一些关节炎患者有疗效。

Like any other public servants, police must respond to public demand.

和其他所有公务员一样，警察必须服务于公众的需求。

7. connect (with): v.与...关联

e.g. This sentence does not seem to connect with the context.

这个句子似乎与上下文脱节。

If you stand on stage and share your view of the world, people will connect with you.

如果你站在舞台上，分享自己对世界的看法，人们会与你产生共鸣的。

8. in a word: 总之

e.g. In a word, this government isn't fit to rule.

简言之，这届政府无法胜任治国之责。

Victor, in a word, got increasingly fed up.

总而言之，维克多越来越厌倦了。

Part IV Key to exercises and scripts for listening

Task 5

1. One year.

2. The company will service the product for free.

3. Technical support and fitting for life.

4. No, it isn't.

Task 6

1. complaint

2. a color TV

3. spotted

4. cable

5. check

Task 7

1. biological products

2. increase

3. distributed

4. limited

5. offer

Task 8

1. Ten years.

2. Yes, it's growing very fast.

3. Biological products are distributed in different kinds of sales,

including farm sales, special shops, healthy food stores, supermarkets, and sales through orders.

4. Sales through orders.

5. Yes, it's very easy.

Task 9

1. 在德国，近十年生物产品的消费者数量持续增长。
2. 大型食品公司，航空服务公司和宾馆也在使用生物产品。
3. 过去十年，这种销售方式在许多欧洲国家增长很快。
4. 因此，数量有限的健康食品店在生物产品市场上所占比重不大。
5. 最近几年，多数人开始愿意使用生物产品，并且现在他们在居住周边就能够很容易买到生物产品。

Task 10

1. biggest food manufactures
2. annual output
3. global scale
4. daily consumables
5. special customer questionnaire survey

Task 11

1. 售后服务
2. customer service station
3. 满意的服务
4. instantly
5. 总之
6. a bright future

Task 12

1. principle
2. set up
3. complaint
4. maintenance
5. The guarantee period

Task 13-Task 15 open

Scripts for Task 5:

All products purchased from our company are guaranteed to keep in good repair for one year. If quality problems happen during the warranty period, our company will fix it for free. Additionally, our company provides technical support and fittings for life. After-sales service isn't restricted by time and we will assign technical personnel

to solve your problems immediately after receiving your call and we would like to hear feedback idea of users and deal with them in a timely manner. If you are having some problems when using our products, please contact us immediately.

Scripts for Task 6:

Jack: Good afternoon, ma'am, what can I do for you?

Client: Good afternoon, I'm having a problem.

Jack: Well, could you tell me name?

Client: My name's Jenny.

Jack: OK. What did you buy?

Client: I bought a color TV from your store yesterday.

Jack: Yesterday? What's the problem?

Client: The picture is not very clear. It is striped and spotted.

Jack: I'm sorry about that. Did you check the cable? Is it linked with the correct socket?

Client: Yes, I have examined the cable, there's no problem.

Jack: Oh, our workers will come to your home to check it, OK?

Client: Thank you very much.

Part V Chinese translation of passages

Passage 1

生物产品的销售

近十年以来，生物产品正在影响着欧洲的食品市场，并已成为生产者和消费者考虑的重要因素。

我们可以看到，生物产品市场正在迅速发展。在丹麦，人们对生物产品的需

求明显上升。生物产品贸易也在迅猛增加。在德国，近十年生物产品的消费者数量持续增长。例如，大量儿童食品已经变成了生物产品。麦当劳使用瑞典的生物牛奶，大型食品公司，航空服务公司和宾馆也在使用生物产品。

生物产品通过各种方式进行销售，包括农场销售，专卖店，健康食品店，超市，订单销售等方式。

销售渠道

农场销售

过去十年，这种销售方式在许多欧洲国家增长很快。周末，许多住在市区的人们会出门寻找传统产品，特别是有机农产品。这在欧洲已经变得非常普遍了。

专卖店

这类商店以提供生物产品而闻名。他们销售未经包装的产品。因为规模小，数量有限，他们只能供应一小部分市场。他们的供应商和购买者数量都比较有限。

健康食品店

大量生物产品在这类零售店销售。消费者可以在此买到安全的产品。在销售产品时，店家同时提供产品信息。他们的销售依靠个人关系，销售量不是很大。因此，数量有限的健康食品店在生物产品市场上所占比重不大。

超市

这类市场很普遍也广受欢迎。人们每周去超市一到两次采购生活必需品和其他物品。要想赢得更多的客户，生物产品必须渗透到超市当中去。在超市里，消费者把生物产品和传统商品进行对比。所以生产商必须对这些生物产品进行适当的包装并命名，告诉消费者这些是真正的生物产品。生物产品进入超市保证了其销售能够占领大的市场销售份额。

订单销售

这类销售提供了高品质的知名产品。例如，大多数莱茵白葡萄酒都是通过订单和邮寄方式完成的。在希腊，许多新的生物酒和橄榄油的生产商都在用这种方式销售产品，并且取得了成功。

最近几年，多数人开始愿意使用生物产品，并且现在他们在居住周边就能够很容易买到生物产品。生物产品改变了人们对于食物的看法。在未来的二、三年内，生物产品将在儿童食品市场上担当重要角色并占据最大份额。

Passage 2

雀巢公司的售后服务

雀巢公司于 1867 年由亨利·雀巢创立，总部位于瑞士沃州的韦威镇。雀巢已成为全球最大的食品生产商之一。150 年前，雀巢只是一个生产婴儿食品的小车间。根据 2014 年、2015 年和 2016 年的年收益和其他指标，现在雀巢已成为一家处于世界领先地位的食品公司。雀巢 2014 年名列财富杂志世界 500 强第 72 位，2016 年名列福布斯全球 2000 强第 33 位。20 世纪初，雀巢开始拓展产品多样化，在全球建立了众多分支机构。从最初在美国，日本和德国设立子公司，现在雀巢已遍布超过 194 个国家，拥有 339000 多名员工。

雀巢的大部分产品为日常消费品，高质量的产品和友好的合作氛围是公司发展的重要因素。这两方面都必须基于优质的售后服务。雀巢拥有独立而完善的售后服务网络，提供周到的客户电话咨询服务和客户站点服务。从而保证了雀巢能够提供高品质的产品和服务。

对于雀巢而言，质量和安全是公司的头等大事。安全 and 质量第一的准则适用于雀巢的全线产品，从食品，饮料到所有体系和服务。公司承诺通过向客户提供安全，优质产品和满意的服务赢得客户的信任。雀巢公司使用特有的客户问卷调查以保障产品质量和获得客户反馈。在新产品发布后，客户满意度问卷随即跟上。调查保证了产品的畅销和高品质。同时紧急情况下，公司将有足够的时间找到应对措施。

质量管理体系是一个在全球被广泛采用的平台。雀巢用它来保证质量标准，食品安全，并为消费者创造价值。一方面，管理体系保证了雀巢原材料的高质量，另一方面，它还能够使农民受到保护并使其增加收入。雀巢拥有全球化的客户服务机构，能对任何消费需求、问题和消费关注点及时做出反应并给予处理。雀巢常常邀请客户聊公司的方方面面，并向客户提供公司地址、电话，方便客户与公司取得联系。

总之，雀巢向客户提供全面、精准、及时和热情的售后服务，助力公司取得持续成功并为公司美好的前景保驾护航。

Unit 8 Biotechnology Advancements

Part I More information for the unit

When we talk about biotechnology, we usually refer to four branches: Green biotechnology is used in the agricultural field, such as the development of transgenic plants, need for enhancing plants and removing pesticides; blue biotechnology deals with seas and oceans usages of biotechnology; white biotechnology is a kind of technology whose function is to reduce the costs of producing industrial products that the traditional processes cannot achieve; the forth one is red biotechnology which may be the best way to solve many medical problems. With this technology, in medical processes, doctors can find genetic cures in patient treatment.

The application of biotechnology is gaining interest worldwide and the combinations of biotechnology, chemical and physical processes are used in such areas as medicine, pharmaceutical industry, agriculture, industry and environmental protection. The development of biotechnology could change the pattern of future life science, industry and economy. Almost every country is now paying increasing attention to this brand-new and promising field.

Part II Explanation of difficult sentences in reading passages

Passage 1

1. Biotechnology is a part of every part of the human life, in fields that include physiology, immunology, microbiology, genetics, biochemistry, medicine, agriculture, food science, environmental science, mining, chemical and bio-process engineering. (Para.1)

Explanation: 此句虽长，但只带有一个 **that** 引导的定语从句，修饰先行词 **fields**。**that** 在从句中做主语，谓语是 **include**。其后是并列成分，做 **include** 的宾语，揭示 **fields** 的具体学科领域。此句的中文意思是：生物技术渗透到人类生活的方方面面，其领域包含了生理学、免疫学、微生物学、基因学、生物化学、医学、农学、食品科学、环境科学、采矿工程学、化学和生化工程学。

2. For instance, the Egyptians discovered yeast that could make breads and the Chinese discovered fermentation techniques for brewing. (Para.2)

Explanation: 此句是由 **and** 连接的并列复合句，其中第一个分句中还包含了一个由关联词 **that** 引领的定语从句，修饰先行词 **yeast**。此句的中文意思是：例如，埃及人发现酵母可以制作面包，而中国人利用发酵技术进行酿酒。

3. Using stem cells or other biomaterials for regenerative medicines gives way for healing injuries more rapidly, as well as replacing organs through tissue engineering. (Para.4)

Explanation: 此句虽长却是一个简单句，主语 **Using stem cells or other biomaterials for regenerative medicine** 是动名词短语，谓语是 **gives way for**，介词 **for** 后要用名词形式作其宾语，故后面的两个相关的动词 **heal** 和 **replace** 使用了动名词形式 **healing injuries more rapidly** 和 **replacing organs through tissue engineering**，并用 **as well as** 连接。此句的中文意思是：再生医学中使用干细胞或其他生物材料为更快地治愈创伤和通过组织工程学进行器官移植开辟了途径。

4. The common discussions in biotechnology are future developments that will continue to impact human health around the world. (Para.5)

Explanation: 此句中的 **that will continue to impact human health around the world** 作限制性定语从句，修饰 **future developments**，用来阐释未来的发展对人类健康的影响。此句的中文意思是：生物技术方面的讨论一般都是有关未来的发展对世界人类健康的持续影响。

Passage 2

1. If you are interested in Research and Development, then becoming a Research Associate can provide an interesting career that allows you to carry out experiments under the instructions of established Scientists. (Para. 6)

Explanation: 这个句子比较复杂一些。首先 **if...then** 引导的是条件状语从句及其主句，主句的主谓语为 **becoming a Research Associate**（动名词短语）**can provide**。句后还跟随了一个由 **that** 引导的定语从句 **that allows you to carry out ...**，修饰先行词 **career**。此句的中文意思是：如果你对研究和开发感兴趣

趣，那么成为研究助理能够为你提供一项有趣的工作，使你能够在资深科学家的指导下进行试验研究。

2. In biotechnology marketing, you would manage and devise campaigns aimed at particular customer areas, through such methods as working with advertising agencies and maintaining a visible presence at medical conventions and trade shows. (Para.10)

Explanation: 此句是一个结构复杂的简单句，只有一套主谓语 *you would manage and devise*。句首介词短语 *In biotechnology marketing* 作状语；谓语动词 *would manage and devise* 的宾语是 *campaigns*；*aimed at particular customer areas* 是过去分词短语作后置定语，修饰先行词 *campaigns*；其后的介词短语 *through such methods (as)* 作谓语动词的方式状语，*such as* 引出列举成分解释 *methods*，故其后需用动名词 *working (with advertising agencies)* 和 *maintaining (a visible presence)*。最后一个介词短语 *(at medical conventions and trade shows)* 作后置定语，修饰 *presence*。此句的中文意思是：在生物技术营销方面，你要针对具体的消费者领域去管理和设计营销活动，比如可以与广告公司合作，高调现身医学会议和商贸交易会等。

Part III Examples with some of the key words and expressions

Passage 1

1. combine v. 使化合；使联合，结合

e.g. Why not combine traditions of the past with the innovations of the future?
为什么不可以把过去的传统和未来的创新相结合呢？

Or take the best aspects of one product and combine it with another product.
或者将一个产品的最佳方面与另一个产品相结合。

2. render v. 致使；提出；实施；呈现；补偿

e.g. Juries nearly always render verdicts with which I agree.
陪审团几乎总是做出我赞同的裁决。

In this case, you want to render a table that shows all the relevant information about the new material.

在这个例子中，你希望呈现一个表格来显示新材料的所有相关信息。

3. alternative a. & n. 供选择的，交替的；二中择一，供替代的选择

e.g. What other alternatives do we have?

我们有其他什么替代方法吗？

He said there is no alternative for him but to keep waiting for his

friends.

他说，他除了等他的朋友以外没有其他选择。

4. stem from 起源于，来自

e.g. Many of my poems stem from simple memories.

我的许多诗歌来源于单纯的记忆。

This difference may stem from improved nutrition or other environmental factors.

这种差异可能来自于营养的改善或其他环境因素。

5. regenerate v. 使再生；革新

e.g. Stem cells can be used to regenerate damaged organs and tissue because they are the earliest form of cells.

干细胞可以用于被损坏的细胞和组织的再生，因为它们是细胞的最初形式。

It's our first step towards the goal — to regenerate organs that could replace damaged or lost ones.

这是我们迈向目标的第一步——能够再生器官来替换受损伤或失去的器官。

6. give way for 让位于

e.g. Stone has given way to glass and concrete. 石材让位给玻璃和水泥。

In a highly competitive environment, the needs of the market usually give way to the need for competition.

在剧烈竞争环境下，市场需要往往让位于竞争需要。

7. be in one's infancy 在幼稚状态；处于早期或萌芽时期

e.g. He considers this theory to be still in its infancy.

他认为这一理论仍处于早期阶段。

This trend appears to be in its infancy.

这一潮流仍然处于萌芽阶段。

8. impact n. v. 影响；效果；碰撞；冲击

e.g. Right now, we have no idea of the impact of these drug residues or what we can do about them.

目前，我们还不知道这些药物残留会对身体产生什么影响，也不知道该如何处置。

How do you evaluate the impact of this incident?

你如何看待这个事件的影响？

9. scope n. 适用范围

e.g. Your question is beyond the scope of our discussion.

你的问题超出了我们的讨论范围。

While very important, this is beyond the scope of this article.

尽管这很重要，但是它超出了本文的范围。

Passage 2

9. branch 分支，分部

e.g. His specialism is game theory, a branch of maths that studies how

people negotiate with each other.

他的专长是博弈论，一个研究人们如何进行谈判的数学分支。

Psychiatry is a branch of medical science and should be investigated by observation and experimentation like the other natural sciences.

精神病学是医学的一个分支，应当像其他自然科学一样以观察和试验为研究手段。

10. explosive a. 爆炸的；爆炸性的

e.g. He suggests a new era of explosive activity in this area is just beginning.

他认为在这一领域出现爆炸性活动的新时期才刚刚开始。

There are several reasons for this explosive growth.

这种爆炸性增长有几个原因。

11. maintain v. 维持；继续；维修；主张；供养

e.g. Part of my job is to maintain good relationships with our clients.

我的部分工作是同我们的客户保持良好的关系。

Even if we cannot agree, we should maintain our contact.

即使我们不能取得一致，我们也要保持联系。

12. instruction n. 指令；指示；说明

e.g. He turned a deaf ear to the instruction given by his teacher.

他对老师的教导充耳不闻。

The instruction should be carried out without any reservation.

应当不折不扣地执行这个指示。

13. engage in 从事；参加

e.g. Engage in activities you like.

参加你喜欢的活动。

This is where we engage in much of our commerce and sell many of our goods.

在这里我们从事大量的商务活动并销售很多商品。

14. devise v. 设计；想出；发明；图谋

e.g. We should all work together to devise policies to improve the economic situation.

我们应该一起努力制定政策来改善经济状况。

Let's devise a new instrument to complete this task on time.

让我们设计一台新仪器来按时完成这项任务。

Part IV Key to exercises and scripts for listening

Task 5:

1. A good résumé should be limited to one page and describe your most relevant information.
2. Because the employers are too busy to read them.
3. Don't begin your sentences with "I" and use action verbs to describe your work experience.
4. To ask a friend or teacher to read and give an opinion about your résumé.
5. You should be honest in giving your information.

Task 6:

1. popular
2. are attracted
3. get involved in
4. apply for
5. a big demand

Task 7:

1. biology
2. molecular level
3. fermentation techniques
4. dry soil areas
5. potential health problems
6. pharmaceutical companies

Task8

1. Biotechnology is based on biology.
2. Fermentation techniques are used for brewing; advanced cellular and DNA technology provides solutions to major global issues.
3. Global warming, world hunger and pollution.
4. Regenerative medicine, genome screening and gene therapy.
5. Jobs in pharmaceutical companies, chemical, agricultural and allied industries.

Task 9

7. microbiology

8. medicine
9. bio-process engineering
10. plant chemicals
11. gene therapy

Task 10:

1. 现代生物技术是指在分子水平上对生命有机体进行科学处理，来生产健康食品和有用产品。
2. 以食品生产作为开端，生物技术现在已涵盖先进的细胞和 DNA 技术，用来提升我们生活的几乎所有方面。
3. 生物技术的重要性是生死攸关的，因为它能为全球性的主要问题提供解决方法，比如全球变暖问题，世界人口饥饿问题，还有污染问题。
4. 基因疗法的研究正在帮助人们找到减少或者消除癌症、艾滋病及其他一些疾病对人体伤害的根本原因。
5. 各个领域都在使用的生物技术来延长人的寿命，使癌症可控，提升老年人的生活质量，并用基因组织进行器官移植，也许还会使用 3D 打印机。

Task 11:

1. modify
2. agriculture
3. employment/career opportunities
4. lab technician or research associate
5. research scientist or engineer

Task 12:

1. 多种多样的 /a big number of
2. 工作机会 / employment opportunities
3. 清洗设备 / maintaining equipment
4. 助理研究员/ quality control officer
5. 设计实验 / carry out experiments
6. 生物技术领域 / pharmaceutical industry
7. 研究机构 / medical institution

Task 13:

6. promising prospect
7. increasing attention
8. a series of
9. research on stem cells
10. Functional research

Task 14: (Open)

Scripts for Task 5:

It's important to write a good, clear résumé. A résumé should be limited to one page. It is only necessary to describe your most relevant information. Employers are busy people. Don't expect them to read long résumés.

You need to present your educational background in your résumé, such as the courses you studied in college. For instance, your major is biotechnology. You must have got good scores in biochemistry, genetic engineering, pharmacology, botany and so on. Employers expect you to use action verbs to describe your previous work experience. Never begin your sentences with "I". Instead, use past tense verbs like: managed, designed, created and developed. Also it is not enough to just say you improved something. Be specific. How did you improve it?

Before making copies of your résumé, it is important to check the grammar and spelling. It's a good idea to ask a friend or teacher to read and give an opinion about your résumé.

But the most important thing is to be honest in your résumé. Employers can and will check your information. No one wants to hire a liar.

Scripts for Task 6:

Paula Deen: What kinds of jobs are becoming popular in your country?

Joe Smith: As in many countries, there's been a big growth in anything related to biotechnology. More and more young people are attracted to that field in particular. There's also been a big growth in education.

Paula Deen: There's been a growth in that field in my country too. Many colleges and universities want to get involved in developing practical applications of biotechnology and are trying their best to develop new programs.

Joe Smith: The interesting thing is that biotechnology includes so many courses from botany to zoology, from chemistry to medical science, from genetic engineering to immunology, from cytology to computer science.

Paula Deen: I noticed that too. What kind of jobs can graduates apply for in this

field?

Joe Smith: In my country they have a lot of options such as a lab assistant, pharmacist, medical researcher, sales representative, chemical engineer and biotechnology marketing analyst.

Paula Deen: I think those jobs will become more popular in the future.

Joe Smith: That trend has already begun in my country. In particular, there's a big demand for people to work in pharmaceutical companies, hospitals and food industry.

Paula Deen: So it's easy for the students majoring in biotechnology to find relevant jobs in the future.

Part V Chinese translation of passages

Passage 1

生物技术的成就

简单地说，生物技术就是在生物学基础上发展起来的技术。它将细胞过程和生物分子过程结合起来研发出各种形式的技术和产品。生物技术渗透到人类生活的方方面面，其领域包含生理学、免疫学、微生物学、基因学、生物化学、医学、农学、食品科学、环境科学、采矿学、化学和生化工程学。现代生物技术是指在分子水平上对生命有机体进行科学处理，来生产健康食品和有用产品。

人类一直在运用生物技术。例如，埃及人发现酵母可以制作面包，而中国人利用发酵技术进行酿酒。以食品生产作为开端，生物技术现在已涵盖先进的细胞和 DNA 技术，用来提升我们生活的几乎所有方面。现代生物技术在 19 世纪末叶就已经成为一个众所周知的领域。

生物技术的重要性是生死攸关的，因为它能为全球性的主要问题提供解决方法，比如全球变暖问题，世界人口饥饿问题，还有污染问题。它为医疗领域带来了进步，疫苗在生产，组织工程学在提供生物材料制品。生物技术也是提供替代能源的一种理由，因为它们源于矿物燃料、二氧化碳和植物化合物。为不断增长的世界人口开发食物资源，生物技术研究能够找到途径使干旱土壤地区变肥沃和再生，长出有价值而且有益健康的作物。

生物技术正在阔步前进为人类提供更加长久和更为健康生活的另一个领域就是医疗保健。再生医学中使用干细胞或其他生物材料为更快地治愈创伤和通过组织工程学进行器官移植开辟了途径。基因扫描是生物技术的未来，因为这项技术的进步可以帮助人类扫描检测出潜在的健康问题。生物技术在基因疗法领域可

以为人类生产出治疗糖尿病的胰岛素。基因疗法的研究正在帮助人们找到减少或者消除癌症、艾滋病及其他一些疾病对人体伤害的根本原因。

虽然生物技术取得了令人震惊的进步,但这一领域仍然处在起始阶段。每年,世界生物技术大会将这一领域的领军人物、研究人员、学者邀集在一起分享他们的经验。他们对比、分享并支持近期的成果和革新,并且讨论就要到来的未来趋势。生物技术方面的讨论一般都是有关未来的发展对世界人类健康的持续影响。各个领域都在使用生物技术来延长人的寿命,使癌症可控,提升老年人的生活质量,并用基因组织进行器官移植,也许还会使用 3D 打印机。

作为一个学科,生物技术的发展神速。就业方面,生物技术已经成为快速增长的行业之一。就业记录表明,生物技术的未来空间很大。生物技术人才可以在制药公司以及化工、农业及相关行业找到自己的事业。他们可以从事生物工程行业中的计划、生产及管理工作。

Passage 2

研读生物技术的毕业生的职业选择

生物技术就是运用生命体系和组织来研发和制造产品的一个科学分支。生物技术也可以用于产品的改进。生物技术已经存在了几十年,在医疗、化学研究和农业方面已经取得了一些开创性的突破。

获得生物技术学位后可以从事研究工作,而且它也可为你从事管理、营销和实验室科研等广泛领域的工作打下一个极好的基础。就业机会是很激动人心的,而且你的职务可以是一名技术师、生物医学工程师、分析师或者研究助理等。

随着生物技术的日益普及和爆炸性增长,生物技术领域的就业机会是非常之多的。你可以在食品、化工和制药等行业中当一名研究员、教师、营销经理、科学作家、质检人员或者生产主管。

很多技术学院和综合性大学都想参与开发生物技术的实际应用,并很快推出了新的课程。毕业后,学生们在这些领域将会有很多的就业机会去担任如下专业职务:

实验室技术师: 职责包括按操作规程清洗和维护生物技术科学家使用的设备并且具体操作各种设备。

研究助理：如果你对研究和开发感兴趣，那么成为研究助理能够为你提供一项有趣的工作，使你能够在资深科学家的指导下进行试验研究。

研究员：如果你想进入这一领域的高层次，你可以选择作一名研究员。这项工作是你能和资深科学家一起设计并进行试验，而后写出报告供以后发表。

工程师（化工、电气、环境和工业领域）：这个职位涉及参与各种项目，从研制机器人到辅助其他研发工作。

销售代表：作为销售代表，你要与医院、医生及各种医疗机构打交道，让他们了解最新的生物技术产品，并力求使他们认可市场上你的产品，而不是竞争对手的产品。

市场营销：在生物技术营销方面，你要针对具体的消费者领域去管理和设计营销活动，比如可以与广告公司合作，高调现身医学会议和商贸交易会等。

业务开发经理：这个职位涉及的职责是和同事一起向客户推介产品并与战略伙伴谈判合作协议。

