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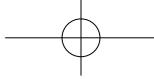
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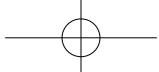
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Unit

# 1

# Urban development

## PART I

## UNDERSTANDING AND LEARNING

### Overview

Over the past decades, China has shown the world that it has achieved the tremendous transformation from standing up and growing prosperous to becoming strong. Now, to make the country stronger and raise the living standards of its people to a higher level, the Chinese government is striving to seek further development on its continued journey toward national rejuvenation.

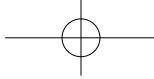
This unit explores urban development, a topic which is important to discuss as more people in China are expected to live in cities in the future. What their lives will be like depends on the decisions made by all levels of government today and in the coming years. Meanwhile, how city development will contribute to China's continued prosperity and strength is also an important topic to explore.

Text A is an expository essay about smart cities, especially smart city development in China. Beginning by mentioning China's increasing

modernization and urbanization, the author brings up the main topic and central idea of the essay in the second paragraph. The only way to avoid the problems of traditional urbanization from getting worse is through building "smart cities". Then, by introducing what a smart city is like and how it will work, the author gives the reader a clear picture about smart cities and how they can help avoid the problems of traditional urban life. The author finally concludes by mentioning China's ongoing attempts in developing smart cities, and predicting that China will continue to advance in this direction.

Text B is a typical argumentative essay that discusses deurbanization, a new trend in urban development. The author believes that technological advances emerging in the Fourth Industrial Revolution will reduce the need for people to live close to each other and weaken the advantages of cities. He argues that new technologies will enable people to live away from cities, bring about decentralized alternatives to our supply system, and make deurbanization the prospect of the future. In structuring the text, the author presents the thesis (i.e. the central idea) in the opening paragraphs, and then supports it with several sub-points in the body paragraphs, followed by a conclusion in the final paragraph.

While teaching Text A, the teacher can guide students to talk about the essential components of a smart city, the smart services they now enjoy in their city or hope to enjoy in the future, and



the way the smart city idea benefits a city, its government and residents respectively.

While handling Text B, the teacher can guide students to talk about the urban problems they experience in daily life, the influences of new technologies on urban development, and their own preferences for future living (e.g. in a big city vs. away from it).

Other class activities can include conducting a survey about smart city development in present China, writing a short science fiction essay about life in future cities, having a debate or group discussion about the pros and cons of working remotely, etc.

## Section A

# From urbanization to smart cities

### Background information

#### Internet of Things

The Internet of Things, or IoT, is a system of interconnected computing devices embedded in everyday objects, enabling them to send and receive data via the Internet. These “objects” can be everything from mechanical and digital machines (e.g. cars, coffee makers, mobile phones, and wearable devices) to animals and people. Combined with automated systems, these connected devices can communicate and interact with others over a network, and can be monitored and controlled remotely. IoT may influence many industries such as manufacturing, transportation, agriculture, retail, finance, healthcare, and urban design. Emerging tools and technologies like smart speakers, machine learning, and 5G are

enabling enterprises, consumers, and governments to be more efficient and give us more control over what we do at home and in the workplace.

### Detailed study of the text

#### 1 From **urbanization** to smart cities (Title)

★ **urbanization**: *n.* [U] the process by which towns and cities grow bigger and more and more people go to live in them 城市化

*In areas where rapid urbanization is taking place, daily water needs are sometimes very hard to meet.* 在城市化快速发展的地区，有时很难满足日常用水需求。

#### 2 As China is transitioning to a **modernized** nation and has become a **benchmark** of economic progress, the rate of urbanization has accelerated to **unparalleled** levels. (Para. 1)

**Meaning:** As China is developing into a highly advanced country and has become a standard for measuring economic progress, towns and cities in China are also expanding faster than ever before.

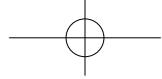
★ **modernize**:

*vt.* make sth. such as a system or building more modern 使(系统、建筑物等)现代化

*In recent years, the city has been working on a project to modernize its public healthcare system.* 近年来，该市一直在开展一项公共保健系统现代化的项目。

*vi.* start using more modern methods and equipment 采用现代方法和设备；现代化  
*If the factory were to survive, it would have to invest a lot of capital to modernize.* 这家工厂若要生存下去，就必须投入大量资金进行现代化改造。

★ **benchmark**: *n.* [C] sth. that is used as a standard by which other things can be judged or measured 基准；规范



*Her outstanding performances set a new benchmark for ballet dancers throughout the world.* 她出色的表演为全世界的芭蕾舞演员树立了新的标杆。

★ **unparalleled:** *a. (fml.) bigger, better, or worse than anything else* 无比的; 无双的; 空前的

*The book about the development of the famous tech company has enjoyed a success unparalleled in recent publishing history.* 该书讲述了这家著名科技公司的发展历程, 在近期出版史上取得了空前的成功。

3 The population living in cities has **been projected to** increase to nearly 70 percent by 2050. (Para. 1)

**Meaning:** According to predictions, almost 70 percent of the population will be living in cities by 2050.

★ **be projected to do sth.:** be forecasted to happen in a certain way 预计要  
*According to the United Nations, the number of people aged 60 and older in the world is projected to increase to more than two billion by 2050.* 根据联合国的数据, 预计到2050年, 全世界60岁及以上的人口数量将增加到20亿以上。

4 In fact, urbanization is **reshaping** not only the physical environment but also the cultural fabric of society and has a massive impact on the economy. (Para. 1)

**Meaning:** Actually, urbanization is bringing changes to not only the physical environment but also the cultural structures of society and has a powerful influence on the economy.

★ **reshape:** *vt. change the structure or organization of sth.* 改变; 重塑  
*Thanks to the central government's special funds for poverty reduction, the rural*

*landscape in China has been completely reshaped.* 在中央政府专项扶贫资金的支持下, 中国农村面貌已经发生了翻天覆地的变化。

#### Note

The phrase *the physical environment* refers to both the natural environment and the existing man-made environment. The natural environment includes land, air, water, plants, animals, etc. The man-made environment includes buildings and other infrastructure such as roads, railways, parks, and man-made lakes. The physical environment provides our basic needs and offers opportunities for social and economic development.

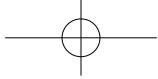
5 Nevertheless, the model of **urban life** mainly revolved around the technological, **demographic**, and **infrastructural** needs of life in the late 20th century. (Para. 2)

**Meaning:** However, the model of city life has mainly centered on the needs of life in the late 20th century in terms of technology, population, and infrastructure.

★ **urban:** *a. relating to towns and cities* 城市的; 都市的  
*Through well-designed nighttime lighting, we will make urban spaces better places to live, work, and visit.* 通过精心设计的夜间照明, 我们将使城市变成更好的生活、工作和参观的场所。

★ **demographic:**

- a. relating to human populations and the information collected about them, such as their size, growth, ages, and education* 人口的; 人口统计的; 人口学的  
*By conducting a national census, we can use demographic data to predict economic trends and population growth for better resource management.* 通过进行全国人口普查, 我们可以利用人口数据来预测经济趋势和人口增长, 以更好地进行资源管理。
- n. (~s) [pl.] information about a group such*



as the people who live in a particular area  
 人口统计数据；人口统计资料  
*According to a recent report, the decline of the labor force is due to the changing demographics of the area.* 根据最近的一份报告，劳动力减少是由于该地区人口情况的变化造成的。

★ **infrastructure:** *n.* [C, U] the basic systems and structures that a country or organization needs in order to work properly, e.g. roads, railways, banks 基础设施（如公路、铁路、银行等）；基础结构  
*Education and training, research and development, and infrastructure are usually important areas for government investment.* 教育与培训、研究与开发以及基础设施通常是政府投资的重要领域。

★ **infrastructural:** *a.* connected with infrastructure 基础设施的；基础结构的  
*The local government has attracted enough funds from abroad for its infrastructural projects.* 当地政府已为自己的基础设施项目吸引了足够的海外资金。

6 As such, it has been **predominantly** dependent on the abundance and easy **availability** of fossil fuels. (Para. 2)

**Meaning:** Thus, it has mostly relied on the large quantity and easy accessibility of fossil fuels.

★ **predominant:** *a.* more powerful, more common, or more easily noticed than others 占优势的；占主导地位的；显著的  
*Positive lifestyle changes can play a predominant role in reducing health problems.* 积极地改变生活方式在减少健康问题方面可以发挥显著作用。

★ **predominantly:** *ad.* mostly or mainly 绝大多数地；主要地  
*The museum is located in a predominantly industrial neighborhood, not too far outside*

*of the ancient capital city.* 该博物馆位于一个以工业为主的街区，在古城城外不远处。

★ **availability:** *n.* [U]

- 1) the state of being able to be obtained or used 可用性  
*The rapid development of the Internet and the availability of information allow travelers to access tourist information more quickly and easily.* 互联网的迅速发展和信息的可获得性使旅行者能够更容易、更快捷地获取旅游信息。
- 2) the state of not being too busy to do sth. 空闲；闲暇  
*I need to give him a call to check his availability to attend the meeting next week.* 我需要给他打个电话，确认一下他下周是否有时间参加会议。

★ **fossil:** *n.* [C] 化石

*The museum contains a nice collection of dinosaur fossils, which makes it a wonderful place for children to visit.* 该博物馆收藏了大量的恐龙化石，是孩子们参观的好地方。

★ **fossil fuel:** *n.* [C, U] 化石燃料（如煤、石油等）

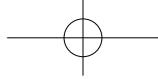
*We should encourage cities to adopt more clean energy and reduce their use of natural gas, coal, and other fossil fuels.* 我们应该鼓励城市更多地采用清洁能源，减少对天然气、煤炭和其他化石燃料的使用。

7 We can appreciate that this dependence has caused a waste of resources and has made a **devastating** impact on the environment and public health. (Para. 2)

**Meaning:** We now realize that this dependence on fossil fuels has caused a waste of natural resources and has been extremely harmful to the environment and public health.

★ **devastating:** *a.*

- 1) badly damaging or destroying sth. 毁灭性的；破坏力极强的



*Global warming must be curbed because it will bring devastating floods, droughts, and diseases.* 一定要遏制全球变暖，因为它会引起毁灭性的洪水、干旱和疾病。

- 2) causing severe shock 令人十分震惊的；具有强大冲击力的

*The decision to close the shoemaking business was devastating news for the affected employees and their families.* 关闭制鞋企业的决定对受影响的员工及其家人来说是十分震惊的消息。

- 8 It has led to **excess** and waste-prone development that proves to be **detrimental**. (Para. 2)

**Meaning:** It has brought about development that exceeds the capacity of existing infrastructure and can easily cause a waste of resources. This type of development proves to be damaging to the environment.

★ **excess:**

- a. (*only before noun*) additional and not needed because there is already enough of sth. 过多的；多余的

*When there is an excess supply of a product in the market, its price tends to decrease.* 当市场上某种产品供应过剩时，其价格往往会下降。

- n. [*sing., U*] a larger amount of sth. than is allowed or needed 过多；过量

*If you eat an excess of sugar, your liver will turn some of that sugar into fat.* 如果你摄糖过量，肝脏会将部分多余的糖转化成脂肪。

- ★ **prone:** a. likely to do sth. or suffer from sth., esp. sth. bad or harmful 易于发生某事（尤指不好或有害的事）的；很可能…的

*People who are prone to getting the flu every winter should probably get a flu shot in the fall.* 每年冬季容易得流感的人或许应该在秋天注射流感疫苗。

**Word formation note**

后缀 **-prone** 与名词结合构成形容词，用于描述人或事物比通常更可能出现某一问题，即“易受……影响的”。例如：

- error-prone* 易出错的  
*allergy-prone* 易过敏的  
*accident-prone* 易出事故的  
*injury-prone* 易受伤的  
*flood-prone* 易发生洪灾的  
*damage-prone* 易损坏的

- ★ **detrimental:** a. causing harm or damage 有害的；不利的

*Lack of communication between parents and children can be detrimental to their relationship.* 父母与孩子之间缺乏沟通对他们之间的关系是不利的。

- 9 Therefore, the traditional model of urbanization is **outdated** and **unsustainable**. (Para. 2)

**Meaning:** Therefore, the traditional pattern of urbanization is too old-fashioned and cannot continue in the long term.

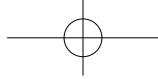
- ★ **outdated:** a. old and no longer suitable for modern purposes, methods, or situations 过时的；陈旧的

*Printed newspapers have become somewhat outdated because of the rapid development of digital media.* 由于数字媒体的快速发展，印刷报纸已经有些过时了。

- ★ **unsustainable:** a.

- 1) unable to continue at the same rate or in the same way 不能继续的；无法维持的  
*Growth at this level will be unsustainable unless we find a highly efficient way to manage the data network.* 除非我们找到一种十分有效的方法来管理数据网络，否则这种水平的增长将无法持续。

- 2) causing damage to the environment by using more of sth. than can be replaced naturally 枯竭式开采资源的；不符合可持续发展的；不可持续的



*Loss of forests and unsustainable farming practices can lead to extreme soil erosion.* 森林的消失和不可持续的耕作方式会导致极端的土壤侵蚀。

- 10 Currently, the only way to avoid the problem from being **escalated** is through building “smart cities”, in contemporary **jargon**. (Para. 2)

**Meaning:** Presently, the only way to prevent the problem from getting worse is through building “smart cities” – a recently adopted expression in English.

- ★ **escalate:** v. become much worse or more serious, or make sth. do this (使) 升级; (使) 恶化

*We should learn to calm down before responding to mean language online, so as not to escalate the situation.* 在回应网络上的不善言语之前, 我们应该学会冷静下来, 以免事态升级。

- ★ **jargon:** n. [U] words and expressions used in a particular profession or by a particular group of people, which are difficult for other people to understand 术语; 行话

*Doctors should speak slowly and avoid using jargon with their patients.* 医生与病人交谈时, 应放慢语速并避免使用术语。

- 11 The idea of smart cities – infrastructure **interlinked** by software – isn’t new, but it’s undeniably cool. (Para. 3)

**Meaning:** The idea of smart cities, that is, cities with software connecting all elements of their infrastructure, isn’t new, but it is definitely cool.

- ★ **interlink:** v. connect or be connected with each other (使) 相互连接  
*No doubt, the world is now more interlinked and interdependent than at any other time in history.* 毫无疑问, 当今的世界比历史上任何时候都更加相互连接, 互为依存。

- 12 Who wouldn’t want to live somewhere where data and evidence, rather than **intuitive** thinking, are used to actively improve their day-to-day lives? (Para. 3)

**Meaning:** Who wouldn’t want to live in a place where their daily lives are improved by using data and evidence, rather than feelings and guesswork?

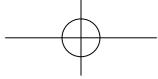
- ★ **intuitive:** a.

- 1) based on a feeling rather than on knowledge or facts 直觉的; 来自直觉的  
*According to experts, the effectiveness of intuitive decision-making is mainly dependent upon experience.* 专家们认为, 直觉决策的有效性主要取决于经验。
- 2) able to understand situations without being told or having any proof about them 有直觉力的  
*She has an intuitive sense for what people need, even before they ask for it.* 她具有某种直觉力, 能够感知人们所需要的东西, 甚至在他们表达出来之前。

- 13 In a sense, a smart city can be **defined** as one that makes **optimal** use of all the **interconnected** information available to better understand and control its **operations** and to **optimize** the use of limited resources. (Para. 3)

**Meaning:** In one way, a smart city can be described as one that makes the best use of all the interconnected information people can get to understand and control the city’s operations in better ways and to put limited resources into best use.

- ★ **define sth. as:** describe or label sth. as sth.  
把…定义为; 把…描述为  
*I define success as finding one’s passion, being able to follow one’s passion, and being happy in all areas of one’s life.* 我把成功定义为发现自己的激情, 能够追随自己的激情, 并在生活的各方面都感到快乐。



★ **optimal:** *a. (fml.)* the best or most suitable  
最佳的；最适宜的

*It is important to learn how to clean our computer to ensure its optimal efficiency.*  
学会如何清洁电脑以确保其最佳效能非常重要。

★ **interconnected:** *a. (fml.)* with different parts  
or things connected or related to each other  
互相连接的；互相联系的

*Mental and physical health are interconnected.*  
心理健康和身体健康是相互关联的。

★ **operation:** *n.*

1) [C, U] the work or activities done by a  
business or organization, or the process  
of doing this work 业务；经营；操作  
*Sending a wire transfer is a simple  
operation, but almost all banks charge  
international wire transfer fees to send  
or receive funds.* 电汇是一项简单的操作，  
但几乎所有的银行都要收取国际电汇费来发  
送或接收资金。

2) [C] the process of cutting into sb.'s  
body to repair or remove a part that is  
damaged 手术  
*If you have had an operation on your  
stomach or bowels, you usually won't be  
able to eat or drink for a few days.* 如果你  
的胃或肠做了手术，通常需要持续几天不能  
进食或饮水。

★ **optimize:** *vt.* improve the way that sth. is  
done or used so that it is as effective as  
possible 使最优化；使尽可能完善  
*In order to reduce costs and improve  
efficiency, engineers must optimize the  
design of the operating system.* 为了降低成本  
和提高效率，工程师必须优化操作系统的设计。

14 From the perspective of the **inhabitants**, a  
smart city **is equated to** a space that has all  
the core functionality of a city **integrated  
with** and enhanced by technology to deliver a  
sustainable, prosperous, and **inclusive** future  
for its citizens. (Para. 4)

**Meaning:** For the residents, a smart city is  
a space that has all the essential functions  
of a city. These functions are linked and  
improved by technology to ensure that  
everyone living in the city continues to enjoy  
an abundance of resources and opportunities  
in the future.

★ **inhabitant:** *n.* [C] one of the people who  
live in a particular place 居民  
*The village has been making efforts to  
preserve the cultural heritage of the ancient  
inhabitants that once lived there.* 这个村庄一  
直努力保护曾经居住在那里的古代居民的文化  
遗产。

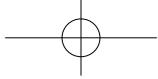
★ **equate:** *vt.* consider that two things are  
similar or connected 使等同  
*Some people equate having a good degree  
with a guarantee of employment.* 有些人认为  
拥有一个好的学位就等于保障就业。

★ **equate sth. to / with sth.:** consider sth. as  
equal or equivalent to sth. else 认为某物与另  
一事物相等或相仿  
*When asked "Can wealth be equated to  
happiness?", most people would answer "No".*  
当被问及“富有是否等同于幸福？”时，大多  
数人都会回答“不是”。

★ **integrate (sth.) with / into sth.:** combine  
sth. in such a way that it becomes fully a  
part of sth. else (将某事物)与另一事物结合  
成为一体  
*Food and music are often integrated  
into festival events as a way to attract  
participants and to make the occasion more  
enjoyable.* 美食和音乐经常会融入节日活动中，  
以此来吸引参与者并使活动更加欢快。

★ **inclusive:** *a.*

1) including a wide variety of people,  
things, etc. 包容广阔的；范围广的  
*Let's work together to build a more  
inclusive society that creates equal  
opportunities for all.* 让我们共同努力，建



设一个更加包容的社会，为所有人创造平等的机会。

- 2) **having the total cost contained in the price** (价钱或费用) 包括一切的  
*Booking an all-inclusive holiday can be a great deal when you are budgeting for a trip.* 为旅行做预算时，预订全包度假产品会很合算。

- 15 Why can such an idea **be poised to** become a common standard of assessment of life in modern developed cities? (Para. 5)

**Meaning:** Why can such an idea seem certain to become a common standard for assessing the quality of life in modern developed cities?

★ **poised:** *a.*

- 1) (*not before noun*) completely ready to do sth. or for sth. to happen 准备好的；准备就绪的

*We were all poised for the huge workload the new project would bring.* 对于新项目将带来的巨大工作量，我们都做好了准备。

- 2) behaving in a calm, confident way, and able to control your feelings and reactions 镇定的；自信的；沉着的  
*I was impressed that the little boy looked very poised and confident before the performance.* 小男孩演出之前看上去十分镇定且自信，这让我印象深刻。

★ **be poised to do sth.:** be ready to take action at any moment 准备好做某事；准备行动  
*Researchers in China are poised to begin large-scale trials of the drug this week.* 中国的科研人员准备于本周开始对该药物进行大规模试验。

- 16 They provide numerous benefits to people – they are places where people have more opportunities to seek various jobs, enjoy the convenience of public **transit**, share abundant resources, and access **lavish** facilities. (Para. 5)

**Meaning:** They bring a lot of benefits to people – for example, they are places where people can more likely find various types of jobs, enjoy the convenience of public transportation, share rich resources, and use abundant facilities.

★ **transit:** *n.* [U]

- 1) a system for moving people from place to place 交通运输系统

*Beijing boasts a fast and convenient public transit system, offering a great way for visitors to see the city.* 北京拥有快速、便捷的公共交通系统，为游客提供了观光这座城市的绝佳方式。

- 2) the process of moving goods or people from one place to another (货物或人的) 运输

*Whenever you travel with your laptop, always put it in a heavy-duty bag to keep it safe in transit.* 当你携带笔记本电脑旅行时，一定要把它放在结实的包里以确保在运输中安全。

★ **lavish:**

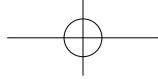
- a.* 1) large in quantity and expensive or impressive 大量的；昂贵的；使人印象深刻的

*You don't need to buy lavish presents to show your love. Sometimes the best gifts come from the heart.* 你不需要购买奢华的礼物来表达爱，有时候最好的礼物来自用心。

- 2) very generous 慷慨的；大方的  
*The new employee was satisfied because he was honored with lavish praise.* 因为受到了大力表扬，这位新员工感到心满意足。

- vt.* give sb. or sth. a lot of love, praise, money, etc. 慷慨给予

*The student was a newcomer in the class, so the teacher lavished extra attention on him over the last two weeks.* 这位学生是班上新来的，所以过去两周老师特别关注他。



- 17 Another important reason is the swift rise of smartphones, **cellular** broadband, and low-power-high-efficiency embedded **computing**. (Para. 6)

**Meaning:** Another important reason is the rapid development of smartphones, cellular broadband, and low-power-high-efficiency computing that integrates computer systems or processors into various devices for specific functions.

★ **cellular:** *a.*

- 1) working by using a network of radio stations to send signals instead of by a wire 蜂窝状的; 蜂窝式的  
*Because the company mainly targets retirees, its cellular service plans tend to be inexpensive.* 因为该公司主要面向退休人员, 因而其移动电话服务套餐一般都很便宜。
- 2) consisting of or relating to the cells of plants or animals 由细胞组成的; 细胞的  
*The nutrients contained in foods can enhance cellular functions and strengthen the body's immune system.* 食物中所含的营养成分可以改善细胞功能, 增强身体的免疫系统。

★ **computing:** *n.* [U] the activity or skill of using computers or programming computers 计算机使用; 计算机技能; 计算机编程  
*Professionals with cloud computing skills have been in high demand in recent years.* 近年来, 对具有云计算技能的专业人员有很大需求。

- 18 The **parameters** of what **constitutes** a smart city have also changed with it. (Para. 6)

**Meaning:** The usual elements that make up a smart city have also changed along with it.

★ **parameter:** *n.* [C, usu. pl.] factors or limits which affect the way that sth. can be done or

made 参数; 界限; 范围

*Smart wearable devices like smartwatches and fitness trackers can monitor numerous parameters such as blood pressure, heart rate, body temperature, and muscle activity.* 智能手表和健身追踪器等智能可穿戴设备可以监测血压、心率、体温及肌肉活动等众多参数。

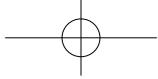
★ **constitute:** *linking verb*

- 1) form or make sth. 形成; 构成; 组成  
*Considering the fact that nurses constitute the majority of healthcare providers, they have a critical function in healthcare systems.* 考虑到护士是主要的医疗保健服务者, 他们在医疗保健系统中发挥着至关重要的作用。
- 2) be considered to be sth. 被视为; 被算作  
*Sidewalks in bad condition constitute a risk not only for pedestrians, but also for the drivers who park along them.* 路况不佳的人行道是有危险的, 不仅对行人, 对沿路停车的司机也是如此。

- 19 With the combination of the Internet of Things (IoT), cloud computing, big data, and AI, cities are no longer static masses of steel and **concrete**; instead, they have the potential to become highly efficient, safe, well-designed, and enjoyable. (Para. 6)

★ **concrete:**

- n.* [U] 混凝土  
*When building a house, we often use concrete to make the foundations.* 盖房子时, 我们经常用混凝土做地基。
- a.* 1) made of concrete 混凝土的  
*A concrete sink can crack over time and can keep developing mold if you do not clean and maintain it on a regular basis.* 混凝土水槽时间久了会开裂, 并且如果不定期进行清洁和维护的话, 它还会不断发霉。
- 2) definite and specific 具体的  
*To help yourself achieve every resolution on your New Year's list, you need to make a concrete plan with measurable goals.*



为帮助自己实现新年愿望单上的每一个心愿，你需要制定一个有可衡量目标的具体计划。

- 20 Therefore, some key features of a smart city can be efficient design, **maximization** of green spaces, **minimization** of traffic jams, **sustainability** of infrastructure and buildings, in-depth monitoring of every data point that can be obtained through **sensors** to enable optimal safety, and effective access to facilities with **minimal** waste. (Para. 7)

**Meaning:** Therefore, some of the central characteristics of a smart city can be good design, the creation of maximum green space and minimum traffic congestion, advanced and sustainable infrastructure and buildings, close monitoring of every data point which can be collected by sensitive detection devices to provide the highest level of safety, and effective use of facilities with the least amount of waste.

- ★ **maximization:** *n.* [U] the process of making sth. as great in amount, size, or importance as possible 极大化；最大化  
*They tried to seek a competitive advantage and maximization of profits by searching for the cheapest and most efficient production locations across the country.* 他们通过在全国范围内寻找成本最低和效率最高的生产地点来试图获取竞争优势和利润最大化。
- ★ **minimization:** *n.* [U] the process of reducing sth. to the smallest possible level or amount 极小化；最少化  
*Waste minimization not only protects the environment, but also makes good economic and business sense.* 废物最少化不仅可以保护环境，而且具有良好的经济和商业意义。
- ★ **sustainability:** *n.* [U] the ability to continue for a long time at the same level 可持续性  
*This paper explores the factors that determine the sustainability of growth in*

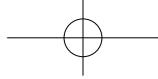
*small and medium-sized enterprises.* 本文探讨了决定中小企业可持续性增长的因素。

- ★ **sensor:** *n.* [C] a piece of equipment used for discovering the presence of light, heat, movement, etc. (探测光、热、活动等的) 传感器，感应装置  
*Smart offices contain sensors that detect whether humans are in the room and will turn on or shut off lights and air-conditioning accordingly.* 智能办公室装有传感器，可探测房间里是否有人，并相应地打开或关闭电灯和空调。
- ★ **minimal:** *a.* very small in degree or amount, esp. the smallest degree or amount possible 极小的；极少的；(尤指)最小的，最少的  
*Digital technology has made our communication possible with minimal cost and effort.* 数字技术使我们能以最小的成本和努力实现交流。

- 21 In addition, when an emergency occurs anywhere in the city, regular traffic can be routed through alternate routes to ensure minimum disruption of life in the surrounding areas. (Para. 7)

**Meaning:** Moreover, when an unexpected dangerous situation happens anywhere in the city, regular traffic services can be directed to optional routes to make sure that life in the surrounding areas is minimally affected by the incident.

- 22 In other words, what is being imagined about smart cities now is based on such a **hypothesis:** Living places are built around the convenience of human life, with technology integrated into every facet from design to construction, monitoring functionality, and maintenance. (Para. 8)



**Meaning:** To put it another way, what we have imagined about smart cities now is based on the assumption that living places are built for the convenience of human life, with technology applied to every aspect of the city, from design to construction, monitoring service, and maintenance.

★ **hypothesis:** *n.* [C] an idea that is suggested as an explanation for sth., but that has not yet been proved to be true 假设; 假说  
*The result of the study supports our hypothesis that these patients are at increased risk of heart disease.* 这项研究结果支持我们的假设, 即这些病人患心脏病的风险在增加。

23 As a result, it is possible to fine-tune operation to the minutest detail. (Para. 8)

**Meaning:** Consequently, it is possible to adjust operation accurately to the smallest detail.

24 To elaborate, if a fire breaks out in a building, not only can the inhabitants be immediately **alerted** through their smartphones, but they can also be directed to the nearest exits and safe spaces. (Para. 9)

**Meaning:** To be more specific, if a fire suddenly happens in a building, not only can the people living in the building be warned right away through their smartphones, but they can also be guided to the nearest exits of the building and to safe spaces.

★ **alert:**  
*vt.* officially warn sb. about a problem or danger so that they are ready to deal with it 使警觉; 向...发出警报  
*The shop owner alerted the police about the robbery immediately and has been working closely with them.* 店主立即向警

方报告了抢劫案, 并一直与警方密切合作。

a. 1) giving all your attention to what is happening, being said, etc. 警惕的; 警觉的  
*When walking alone at night, you should be alert to your surroundings.* 晚上孤身一人走路时, 你应该对周围环境保持警惕。  
 2) able to think quickly and clearly 机警的; 机敏的

*Although he is in his 70s now, his mind is still remarkably alert and focused.* 虽然现在 70 多岁了, 但是他思维仍然非常敏捷, 也极为专注。

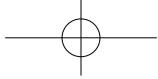
25 Furthermore, the message of the incident will be **instantaneously** conveyed throughout the system, and thus the building's safety measures can be implemented right away. (Para. 9)

**Meaning:** Moreover, the news of the incident will be immediately spread throughout the system, and hence the building's safety measures can be put into use right away.

★ **instantaneous:** *a.* happening immediately 即刻的; 即时的  
*Despite the far distances between these places, email and chat rooms have made instantaneous communication possible.* 尽管这些地方相距遥远, 但电子邮件和聊天室已经使即时通信成为可能。

★ **instantaneously:** *ad.* 即刻地; 即时地  
*Like a drug, scent can instantaneously alter the way you feel and act.* 和药物一样, 香味也可以瞬间改变你的感觉和行为方式。

26 **On top of that**, emergency search and rescue services can be **dispatched within a moment's notice**, and their path through traffic can be cleared and an optimal route provided. (Para. 9)



**Meaning:** In addition to that, emergency search and rescue services can be sent out straight away and given the best route, with all traffic on their way cleared.

★ **on top of sth.:** in addition to sth. 除...之外  
*The student attends the School of Foreign Languages to study French on top of his regular academic schedule.* 除了常规的学习日程之外, 这名学生还在外语学院学习法语。

★ **dispatch:**

*vt. (fml.)* send sb. or sth. somewhere for a particular purpose 派遣; 发送  
*The police dispatched a rescue team immediately after receiving the call for help.* 警方接到求救电话后, 立即派出了一支救援队。

*n.* 1) [sing.] the act of sending people or things to a particular place 派遣; 发送  
*To ensure safe and timely dispatch of your order, we have partnered with trusted and reputable courier companies.* 为确保安全、及时地派送您的订单, 我们与值得信赖且声誉良好的快递公司合作。

2) [C] a message sent between military or government officials (军官或政府官员之间来往的) 公文, 信件  
*Our unit received a dispatch from headquarters, ordering us to tighten security.* 我们部门收到总部发来的一份通知, 命令我们加强安保。

★ **within / at a moment's notice:** within a short period of time 立刻; 马上  
*We are a full-service team of skilled electricians, available within a moment's notice to assist you with your electrical needs.* 我们是一支由熟练电工组成并提供全方位服务的团队, 可随时为您提供电力需求方面的帮助。

27 The possibilities for similar improvements and **enhancements** in all aspects of urban life are immense. However, neither **tangible** nor **intangible** improvements to the quality of life

are just **within grasp**, as many large cities are becoming unmanageable. (Para. 10)

**Meaning:** There are huge opportunities to achieve similar improvements in all aspects of city life. However, it isn't that easy to achieve visible or invisible improvements in the quality of life as many cities are becoming too large to manage.

★ **enhancement:** *n.* [C, U] (*fml.*) the improvement of sth. in relation to its value, quality, or attractiveness 提高; 增加; 增强  
*This organization focuses on the evaluation and enhancement of our country's biodiversity and nature protection policies.* 这个机构的工作重点是评估和改进我们国家的生物多样性及自然保护政策。

★ **tangible:** *a.*

1) able to be touched or felt 可触摸的; 可触知的; 有形的

*With the rapid development of e-commerce, consumers are now used to buying not only tangible products but also various services on the Internet.*

随着电子商务的快速发展, 消费者现在不仅习惯于在网上购买有形产品, 还习惯于购买各类服务。

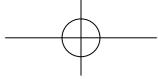
2) clear enough or definite enough to be easily seen or noticed 确凿的; 明显的; 实在的

*Being a highly creative company is associated with tangible benefits such as higher market shares, increased revenue, happier employees, and more.* 公司极具创造力会带来实实在在的好处, 比如更高的市场份额、更多的收入、更快乐的员工等等。

★ **intangible:** *a.*

1) not able to be touched or measured, and difficult to describe or explain 触摸不到的; 难以捉摸的; 不易形容的

*Another intangible benefit of the activity was that thousands of volunteers came*



together around a common goal. 这场活动的另一个无形好处就是成千上万的志愿者为了一个共同的目标聚集在一起。

2) (of a business asset) that has no physical existence (企业资产) 无形的

*The company's two strongest intangible assets are its technology and brand name.* 这家公司的两大无形资产就是它的技术和品牌。

★ **within (one's) grasp:** able to be obtained or achieved by sb. 在(某人)掌握之中的; 触手可及的

*Thanks to the changes in admissions policies, universities that once seemed out of reach for him are now within grasp.* 得益于招生政策的变化, 曾经对他来说遥不可及的大学现在变得触手可及了。

28 The goal, ultimately, is to **rid** cities of the traditional problems and create **fabulous** living spaces where the inhabitants feel safe, comfortable, and productive without unnecessary or **undesirable hurdles**. (Para. 10)

**Meaning:** The goal, ultimately, is to eliminate the usual problems of cities and build excellent living spaces where people feel safe, comfortable, and efficient without being restricted by unnecessary or frustrating barriers.

★ **rid sth. / sb. of sth.:** take action so that a person, place, etc. is no longer affected by sth. bad or no longer has it 使摆脱掉; 使除掉  
*Your immune system can rid your body of many toxins that could cause diseases.* 人体免疫系统可以清除体内许多可能导致疾病的毒素。

★ **fabulous:** a.

1) extremely good or impressive 极好的; 绝妙的

*The young entrepreneur looked fabulous*

*in a dark suit, and presented himself well to his business associates and clients.*

那位年轻的企业家身着深色西装非常帅气, 在商业伙伴和客户面前表现得得体。

2) (*only before noun*) very large in amount or size 巨额的; 巨大的

*Despite his fabulous wealth, he lives a simple and frugal life.* 尽管拥有巨额财富, 但他过着简单而节俭的生活。

★ **undesirable:** a. (*fml.*) (of sth. or sb.) not welcomed or wanted because they may affect a situation or person in a bad way 不受欢迎的; 不合意的; 讨厌的

*We are concerned that building a highway will have undesirable effects on animal habitats in the area.* 我们担心修建公路会对该地区的动物栖息地产生不良影响。

★ **hurdle:**

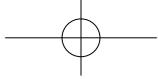
n. [C] 1) a problem or difficulty that you must deal with before you can achieve sth. 障碍; 困难

*One of the biggest hurdles for young writers is getting published, and for him, things were no different.* 年轻作家面临的障碍之一就是作品获得出版, 对他来说, 当时也是如此。

2) one of a series of small fences that a person or horse has to jump over during a race (跨栏赛跑或马术比赛中用的) 栏架  
*Liu Xiang won the 110m hurdle race in the 2004 Olympics, becoming the first Chinese male athlete to win a gold medal in a track-and-field event at the Olympic Games.* 刘翔在2004年奥运会上获得110米栏冠军, 成为第一位在奥运会上获得田径项目金牌的中国男运动员。

v. jump over sth. while you are running (跑步过程中) 跨越

*Finding nobody to open the front door for him, he had to hurdle the wooden gate to get into the front yard.* 发现没人为他开前门, 他只好跳过木门进入前院。



**29 To that end**, China has been investing billions in designing and defining the standards of the future, from 5G technology to IoT, striving to **evoke** the best response from the public for its remarkable projects. (Para. 11)

**Meaning:** To achieve that goal, China has been investing huge amounts of money in designing and describing the standards of the future, from 5G technology to IoT, making great efforts to get the most positive response from the public for its extraordinary projects.

★ **to that end:** (*fml.*) for that reason; in order to achieve that goal 为此; 鉴于此; 为达此目标  
*We must cut costs if we're going to stay in business. To that end, I suggest we suspend purchasing any additional machinery and equipment.* 如果我们要继续经营下去, 就必须削减成本。为此, 我建议暂停购买任何额外的机械和设备。

★ **evoke:** *vt.* produce a strong feeling or memory in sb. 引起, 唤起 (强烈的感情或回忆)  
*The instructor's teaching method evoked my enthusiasm and changed my original thoughts about studying biology.* 那位老师的教学方法激发了我的热情, 改变了我对学习生物最初的看法。

**30** Another remarkable step on the nation's development roadmap is the massive Jing-Jin-Ji (**namely** Beijing-Tianjin-Hebei) urban cluster, which aims to optimize the economic structure in the area, **streamline** many aspects of urban life, and achieve a new **mode** of coordinated growth. (Para. 12)

**Meaning:** Another remarkable step on the development agenda of smart cities is the construction of the large Jing-Jin-Ji (that is, Beijing-Tianjin-Hebei) metropolitan region.

This project aims to improve the economic structure in the area, make many aspects of urban life simpler and more efficient, and create a new type of development where the cities grow together.

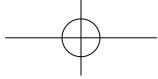
★ **namely:** *ad.* used when you want to give more detail or be more exact about sth. you have just said 即; 也就是 (说)  
*I learned an important lesson when I lost my job, namely that nothing is a hundred percent guaranteed.* 失去工作的时候, 我得到了一个重要的教训, 那就是没有什么是百分之百有保证的。

★ **streamline:** *vt.*

- 1) make sth. such as a business, organization, etc. work more simply and effectively 精简 (企业、组织等) 使效率更高  
*The company is looking for ways to streamline its employees' workflow and maximize their productivity.* 公司正在寻找办法简化员工的工作流程, 以最大限度地提高他们的生产力。
- 2) form sth. into a smooth shape, so that it moves easily through the air or water 使...成为流线型  
*Modern vehicles are often streamlined so that their smooth shapes can reduce air resistance.* 现代汽车通常是流线型的, 这样它们流畅的外形可以减少空气阻力。

★ **mode:** *n.* [C]

- 1) (*fml.*) a particular way or style of behaving, living, or doing sth. 方式; 方法; 做法  
*Jim will have to change his mode of life now that he has high blood pressure.* 吉姆有高血压, 所以不得不改变自己的生活方式。
- 2) a particular way in which a machine or piece of equipment can operate (机器、设备的) 运行方式, 状态, 模式



*Switch your phone to silent mode in a meeting, as it is rude to interrupt the speaker when your phone rings.* 在开会时要把你的手机调到静音模式，因为电话铃响会打断发言者，这是不礼貌的。

**31** All this will be invaluable for future urban design, since development in the coming years and decades will **be modeled on** the results achieved now. (Para. 12)

**Meaning:** All this will be useful for future city design, since development in the coming years and decades will be based on the results achieved today.

★ **be modeled on:** be designed in a way that copies another system or way of doing sth. 模仿；效仿；仿制

*The hospital was modeled on an inner city community, allowing the patients and their families to live a somewhat normal life during the treatments.* 该医院是按内城社区模式打造的，可让病人及其家属在治疗期间过上相对正常的生活。

## Structure analysis and writing

### Writing an expository essay

An expository essay is a type of writing which tries to explain, illustrate, or clarify something in a way that it becomes clearer to the reader. The core task behind an expository essay, as we can infer from its name, is to “expose” information.

Unlike in an argumentative essay where the writer takes a position on a controversial issue and tries to persuade the reader to think in a certain way, in an expository essay, the writer simply sticks to facts and keeps a neutral tone. Instead of conveying strong personal emotions or preferences, the writer just tries to inform or expose information about something (place, idea, concept, etc.) or somebody in a clear, concise,

and objective manner so that the reader can gain a better understanding of the topic.

Since expository essays may include elements of narration, description, evaluation, investigation, or even argumentation, they can be categorized into different types.

### The descriptive type

This is the most common type of expository writing, and it requires the writer to define different aspects or characteristics of a main topic, usually for the purpose of clarifying a well-established idea. Example topics for this type of expository essay can be:

- Describe a few major types of stress in one’s life.
- Describe one’s college campus.

### The process type

In this type of expository essay, the writer advises the reader on how to achieve a result, or informs the reader about the steps that should be followed to complete a task. Example topics can be:

- How to prepare for a presentation.
- How to make travel plans.

### The comparison and contrast type

This type of expository writing shows how two or more things are similar to and different from one another. Example topics can be:

- Compare and contrast attending classes online and in person.
- Compare and contrast one’s college life and high school life.

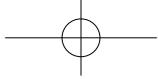
### The cause and effect type

This form of expository writing looks into a particular issue and / or discusses its results over time. Example topics can be:

- Explain the causes of obesity.
- Explain the consequences of constant procrastination.

### The problem and solution type

This type of expository writing presents a



particular problem and discusses the possible solutions to it. Example topics can be:

- How to tackle obesity.
- How to reduce Internet scams.

In structure, like other types of essays, an expository essay contains an introduction, a main body, and a conclusion. The introduction is usually short, starting with probably a hook to grab the reader's attention and ending with a thesis statement that clearly presents the main topic and goal of the essay. The body of the essay usually contains a few logically organized paragraphs, each dealing with one aspect or point of the main topic and with a topic sentence usually provided at the beginning of each paragraph. Lastly, the conclusion is usually a concise summary of the essay's key points or a restatement of its thesis idea.

The following outline format may give students a clearer idea of the essay's structure.

<p><b>Introduction</b>  Hook: _____  Thesis statement: _____  _____</p> <p><b>Body</b>  Supporting point 1: _____  _____</p> <p>Supporting point 2: _____  _____</p> <p>Supporting point 3: _____  _____</p> <p><b>Conclusion</b>  Summary of key points or restatement of the thesis idea: _____  _____</p>
--

Text A of this unit is an expository essay of the descriptive type. Through introducing the meaning of a smart city, its key features, and its ultimate goal as supporting points, the author aims to help the reader become informed of smart cities and understand why building smart cities can be a good solution to the problems experienced by the

traditional model of urban life.

## Structure analysis of the whole text

Text A is an expository piece of writing that informs the reader about smart cities.

Part One (Paras. 1-2) is the introduction of the text. Beginning with a few sentences about the rapid trend toward urbanization in China, this part brings up the main topic and the thesis of the text in the second paragraph: The only way to avoid the problems of traditional urbanization from being escalated is through building smart cities.

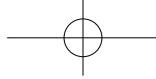
Part Two (Paras. 3-11) is the body of the text, which contains four subpoints.

The first subpoint is given in Paras. 3-4. It concerns the definition and meaning of a smart city. A smart city is one that makes optimal use of all the available interconnected information to better control the operations of a city and optimize the use of limited resources.

The second subpoint is given in Paras. 5-6. It is about the reasons why smart cities can become a common standard for assessing the quality of life in modern developed cities. There are two reasons. The first is the inherent advantages provided by cities, and the second is the swift rise of smartphones and other IT tools or services.

The third subpoint is given in Paras. 7-9. It concerns the key features of a smart city. Para. 7 introduces some key features; Para. 8 highlights these features by offering a hypothesis; and Para. 9 elaborates on the idea of a smart city with an example.

The fourth subpoint is given in Paras. 10-11. It concerns the potential and the ultimate goal of smart cities. The potential of smart cities is immense but not so easy to achieve because many cities are becoming too large to manage. To



realize the final goal, China has been investing huge amounts of money in developing the most advanced technologies, trying to get the public to respond to them most positively.

Part Three (Para. 12) is the ending of the text. The author cites Shenzhen and the Jing-Jin-Ji urban cluster as examples of smart city development, and predicts that China will continue to advance in this field.

## Introduction

**Background:** As China is developing into a modernized nation, urbanization is also taking place faster than ever.

**Thesis:** Currently, the only way to avoid the problem of environmental damage caused by the traditional model of urbanization from being escalated is through building “smart cities”.

(Paras. 1-2)

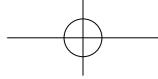
## Body

- Definition and meaning of a smart city. (Paras. 3-4)
- Reasons why smart cities can be a common standard to assess life in modern developed cities. (Paras. 5-6)
- Key features of a smart city. (Paras. 7-9)
- Potential and ultimate goal of smart cities. (Paras. 10-11)

(Paras. 3-11)

## Conclusion

Examples of smart city development in China and prediction of China’s continued development in this area. (Para. 12)



## Section B

### Reading skills

#### Skimming

Students have learned the reading skill of skimming in B1U6. Skimming is a method of rapidly moving the eyes over a text with the purpose of getting a general idea of it. For example, many people skim-read a newspaper article just to get a quick overview, or a text to see whether it's worth reading in detail.

Unlike scanning in B1U3, which helps the reader locate details or specific facts, skimming requires the reader to focus on the topic, the main idea, or the main points. Good skimmers read selectively, completely skipping over some sentences, paragraphs, or even whole pages. Once the reader has a general idea about a text through skimming, they may decide whether to read the entire text more carefully or only to scan for some specific pieces of information.

The following are some steps to help students skim a text.

- 1 Read the title – it is the shortest possible summary of the content.
- 2 Read the introductory or lead-in paragraph(s).
- 3 Read any sub-headings, and identify the relationships between them.
- 4 Read the first sentence of each body paragraph; the main idea of most body paragraphs often appears in the first sentence.
- 5 Alternately read and “float” over the body of the text, looking for the following:
  - Clues about *who*, *what*, *when*, *where*, *how many*, and *how much*;
  - Connective words and phrases such as *furthermore*, *also*, *however*, and *on the contrary*.
- 6 Read the concluding paragraph(s).

For example, after a glance at the title of

Text B, “Embrace the trend of deurbanization”, students will know that the text discusses deurbanization and that the author’s attitude toward deurbanization is positive. If they continue to skim the beginning sentences of the lead-in paragraphs (Paras. 1-3), they will have a rough idea of the background of discussion (i.e. the traditional benefits of urbanization) and the main factor that triggers deurbanization (i.e. technological development).

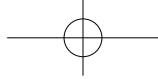
If students are interested in learning more about the reasons that support the author’s view, they can continue to skim the rest of the text. In the body paragraphs, they will find some key points such as new technologies reducing the benefits of cities, the supply system of daily necessities becoming less centralized, automation and robotization leading to job reductions in cities, and cities facing many problems like the formation of heat islands. Then they get to the concluding paragraph (i.e. the last paragraph), where the author restates his opinion that major cities will become less attractive and deurbanization will soon arrive. By skimming the text in this way, students can quickly identify the main idea and key supporting points without reading every sentence.

## Embrace the trend of deurbanization

### Background information

#### 1 deurbanization

Deurbanization is also known as counter-urbanization. It is a demographic and social process by which people move from urban to rural areas. The factors that drive this process include job opportunities, simpler lifestyles, and technology which makes it possible for



people to work remotely via the Internet. One of the consequences of deurbanization is significant population decline in cities that were once densely inhabited.

## 2 the global financial crisis of 2007-2010

The global financial crisis of 2007-2010 was a serious financial crisis that started in the United States and later spread to overseas markets. The immediate trigger of the crisis was the bursting of the housing bubble in the United States in 2007, which led to sharp falls in housing prices, collapse of financial institutions such as investment banks and insurance companies, plunges in stock prices, and a decrease in consumer wealth. This led to a deep economic recession that also affected other parts of the world, including Europe and Asia.

## 3 the Fourth Industrial Revolution

The Fourth Industrial Revolution, sometimes called 4IR or Industry 4.0, is a term first introduced in 2015 by Klaus Schwab, a German economist best known as the founder of the World Economic Forum. Being the fourth major industrial era since the First Industrial Revolution of the 18th century, it is marked by technological advances in many fields such as robotics, artificial intelligence, biotechnology, 5G wireless technology, and autonomous vehicles. Driven by a fusion of physical, digital, and biological innovations, the Fourth Industrial Revolution has the potential to connect billions of people to digital networks and drastically improve the efficiency of business and organizations. It represents a fundamental change in the way human beings live, work, communicate, and relate to one another.

## Detailed study of the text

### 1 Embrace the trend of **deurbanization** (Title)

★ **deurbanization:** *n.* [U] the demographic and social process by which people move from urban areas to rural areas 逆城市化  
*Several American cities are now faced with large-scale deurbanization, which results in vacant homes, abandoned buildings, and empty factories.* 好几个美国城市现在都面临大规模的逆城市化，导致出现了许多空置的房屋、废弃的建筑和空荡荡的工厂。

### 2 Although the global financial crisis following a housing bubble occurred between 2007 and 2010, it's still scary and unforgettable to many of us today. (Para. 1)

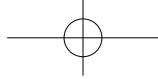
**Meaning:** Although the global financial crisis happened between 2007 and 2010 as a result of an economic bubble in the housing market, many of us still feel scared and cannot forget it even today.

### 3 Chances are that the next financial crisis will focus on cities because we may soon see the end of urbanization. Many may consider this an exaggeration – after all, cities provide numerous benefits to people. (Para. 1)

**Meaning:** It is likely that the next financial crisis will affect mostly cities because urbanization may soon come to an end. Many people may think this idea is too extreme to be true because cities provide people with lots of benefits.

### Note

(the) chances are: used for saying that sth. is likely to happen but is not certain 有可能  
*If you've been to a wedding lately, chances are that you've heard that song because it is one of the most popular love songs these days.* 如果你近期参加过婚礼，你就有可能听过这首歌，因为它是当前最流行的情歌之一。



- 4 It makes sense that **proximity**, or closeness, brought about by urbanization or **centralization**, lets you reduce **commuting** time and expenses. (Para. 2)

**Meaning:** It is easy to understand that short distances between people and things, resulting from urbanization or gathering around a center, make it possible for people to reduce the time they spend every day traveling between their home and place of work and lower their living expenses.

★ **proximity:** *n.* [U] (*fml.*) nearness in distance or time (距离或时间的) 接近, 临近; 邻近  
*What home buyers like best about this neighborhood is its proximity to the river.* 购房者最喜欢这个社区的一点是它靠近河流。

★ **centralization:** *n.* [U] the process of gathering to a center 集于中心; 集中  
*More timely data centralization through Internet access allows us to build a system for sharing public health data.* 通过互联网更及时地集中数据, 我们可以建立一个公共健康数据共享系统。

★ **commute:** *vi.* travel a long distance every day between one's home and place of work 长途上下班; 通勤  
*Metro train is the most convenient option for me to commute between my suburban home and downtown office every day.* 地铁是我每天上下班往返于郊区住宅和市区办公室之间最便利的选择。

- 5 As a result, cities become **magnets** for wealth, money, services, opportunities, and people. (Para. 2)

**Meaning:** As a result, cities become places that attract a lot of wealth, money, services, and people, and provide many opportunities.

★ **magnet:** *n.* [C]  
1) sth. or sb. that attracts many people or

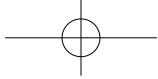
things 有吸引力的事物或人  
*With its unique style and artistic decorations, the theater has become a magnet for the city's creative and fashionable young people.* 该剧院以其独特的风格和艺术装饰吸引了这座城市富有创意且时尚的年轻人。

- 2) a piece of iron or steel that can stick to metal or make other metal objects move toward it 磁铁; 磁石; 吸铁石  
*This experiment is supposed to let the children see whether the magnet will attract materials like paper clips, coins, etc.* 这个实验是让孩子们看看磁铁会不会吸住回形针、硬币等物品。

- 6 Doesn't that mean we will continue to live in cities? I think not, because of the Fourth **Industrial** Revolution, which is marked by emerging technology breakthroughs in a number of fields. (Para. 3)

**Meaning:** That seems to mean we will continue to live in cities. But I don't think so, because of the Fourth Industrial Revolution, during which significant technological innovations are taking place in many fields.

- ★ **industrial:** *a.*  
1) relating to industry or the people working in it 工业的; 产业工人的  
*Despite a slight fall in June, industrial production in the region was still 2.6 percent higher compared to a year earlier.* 尽管该地区的工业产量在六月份稍有下降, 但是与上一年相比仍上升了 2.6%。  
2) having many industries 有很多工业的; 工业发达的  
*Climate will continue to worsen unless the world's industrial nations significantly reduce their emissions of greenhouse gases.* 除非世界上的工业国家大幅度减少温室气体的排放, 否则气候将继续恶化。



7 Among these are **robotics**, artificial intelligence, **nanotechnology**, biotechnology, the Internet of Things, autonomous vehicles and others, which are leading to profound changes in the entire systems of production and management of our society. (Para. 3)

**Meaning:** These fields include areas of science and technology related to robots, artificial intelligence, nanotechnology, biotechnology, the Internet of Things, self-driving cars, and others. All these are leading to great changes in the entire production and management systems of human society.

★ **robotics:** *n.* [U] the science of making and using robots 机器人学; 机器人技术  
*Many low-end manufacturing jobs will disappear because of automation and robotics.* 由于自动化和机器人技术的使用, 许多低端的制造业工作都将消失。

★ **nanotechnology:** *n.* [U] a science which involves developing and making extremely small but very powerful machines 纳米技术  
*The lab is conducting several research projects to explore potential applications of nanotechnology in fields like medicine, transportation, and fashion.* 这个实验室正在开展数个研究项目, 以探索纳米技术在医学、交通和时尚等领域的潜在应用。

8 The need for proximity will decline with new technologies, whether it's remote working, online dating, or online shopping. (Para. 4)

**Meaning:** The need for people and things to be close to each other will decrease due to new technologies, no matter whether they are technologies for remote working, online dating, or online shopping.

9 Though the home-delivery market for food and **merchandise** is in the **midst** of a boom,

new technologies do not need roads, just transportation, whether by plane or flying car. (Para. 4)

**Meaning:** Although the market for delivering food and goods to people's homes is growing, new technologies do not need roads to do the delivery. Instead, they just need to transport things and it doesn't matter if this is done by plane or flying car.

★ **merchandise:** *n.* [U] (*fml.*) goods that are being sold 商品; 货品  
*Companies can avoid duties when exporting or importing merchandise if they are located in these foreign-trade zones.* 如果公司位于这些外贸区的话, 进出口商品时就可以免交关税。

★ **midst:** *n.* (**in the ~ of sth.**)

1) while an event or situation is happening in the middle of the process; when sth. is happening  
*China is in the midst of transitioning from a manufacturing-based economy to one driven by innovation and knowledge.* 中国正处于从以制造业为基础的经济向以创新和知识为驱动的经济转型的过程中。

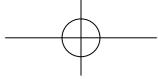
2) in the middle of a place or a group of things or people 在(某地)中部; 在(一堆事物或一群人)中间  
*I'm proud that our campus sits in the midst of this ancient cultural capital.* 我很自豪我们的校园坐落在这座文化古都的中心。

10 In fact, **decentralization** in the supply systems of daily necessities is **on the horizon**. (Para. 5)

**Meaning:** In fact, decentralization in the supply system of goods that are essential to life is likely to happen soon.

★ **decentralization:** *n.* [U]

1) moving the operations of a business or other organizations from a single, central place to several smaller ones (公司或其



他组织的业务)分散化; 疏散  
*As part of a national decentralization project, the organization is transferring more aspects of its services to the municipal level.* 作为一项全国范围内分散化项目的一部分, 该机构正将更多服务转移到市级层面进行。

- 2) the act or process of giving some of the power of a central government, organization, etc. to smaller parts or organizations around the country 权力分散; 权力下放

*The country's decentralization policies in the recent decade aim to increase urbanization and development in areas outside the capital city.* 近十年来该国的权力下放政策旨在提升首都以外地区的城市化水平, 促进发展。

★ **on the horizon:** likely to happen in the near future 将要发生的; 即将来临的

*I didn't have any other job on the horizon, so I accepted this temporary position.* 我近期不会有其他工作机会, 所以就接受了这个临时职位。

- 11 For **instance**, many people receive drinking water from the tap, while decentralized **alternatives** can now harvest water from the air and create clean water in substantial quantities. Decentralized sewer systems can also take care of waste water. (Para. 5)

**Meaning:** For example, many people get the water they drink from the tap, but alternative systems established in smaller and local places instead of a central place now enable people to collect water from the air and then create large amounts of clean water. Sewer systems established in local places can also process waste water.

★ **instance:** *n.*

- 1) (**for** ~) for example 例如  
*It is healthy to have a nice breakfast every day. You might, for instance, start*

*your day with a breakfast of one slice of bread and a glass of milk.* 每天吃一顿美味的早餐有益健康。比如, 你可以用一片面包加一杯牛奶作为早餐来开始一天的生活。

- 2) [C] an example of a particular kind of situation (特定情况的) 例子, 实例  
*A certain percentage of medical cures may be instances of spontaneous healing rather than results of treatment.* 医疗治愈的例子中可能有一定比例是自我康复而非治疗的结果。

★ **alternative:**

- n.* [C] sth. that you can choose instead of sth. else 供替代的选择; 供选择的东西  
*To enable faster growth, we have no alternative but to rely on scientific and technological progress.* 为实现快速发展, 我们别无选择, 必须依靠科技进步。

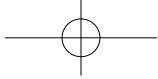
- a.* (*only before noun*) different from sth. else and able to be used instead of it 供替代的; 供选择的  
*This plan is not workable; we must come up with an alternative method.* 这个计划行不通, 我们必须想其他的方法。

- 12 We can also generate electricity with **solar panels**, **wind turbines**, and living plants to charge our tablet, bake a cake, warm our house, and fuel our car. (Para. 5)

**Meaning:** In addition, we can use equipment for solar or wind energy and living plants to produce electricity to power up our tablet computer, bake a cake, heat our house, and fuel our car.

★ **solar:** *a.* (*only before noun*)

- 1) using the power of the sun's light and heat 利用太阳光(能)的  
*Wind and solar energy are becoming increasingly affordable, but neither can produce electricity continuously.* 风能和太阳能变得越来越便宜, 但是二者都不能持续产生电力。



- 2) relating to the sun 太阳的；和太阳有关的  
*The lab is building an advanced instrument to detect planets orbiting stars outside the solar system.* 该实验室正在建造一部先进仪器，以探测太阳系以外围绕恒星运行的行星。

★ **panel:** *n.* [C]

- 1) a flat piece of wood, glass, etc. with straight sides, which forms part of a door, wall, fence, etc. (门、墙、栅栏等的) 镶板, 嵌板; 窗玻璃片  
*The aluminum panels of the door can vary in thickness, and the thickness of the aluminum is the basis of how the garage door is graded.* 门的铝板厚度不同, 而铝板的厚度是车库门分级的基础。
- 2) a group of people with skills or specialist knowledge who have been chosen to give advice or opinions on a particular subject (由选定人员组成的) 专家咨询组  
*There will be a panel of experts from across the country to answer your questions and give you up-to-date information about the issue.* 将有来自全国各地的专家小组回答您的问题, 并为您提供有关该问题的最新信息。

★ **solar panel:** *n.* [C] a piece of equipment, usu. kept on a roof, that collects and uses energy from the sun to heat water or make electricity (通常放在屋顶的) 太阳能电池板  
*In addition to building large solar farms, installing solar panels on villagers' roofs is also an important option to produce solar power.* 除了建造大型太阳能发电场, 在村民的屋顶上安装太阳能电池板也是生产太阳能电力的一个重要选择。

★ **wind turbine:** *n.* [C] 风力发电机  
*Although small wind turbines make economic sense in many locations, they're not for everyone as they take up a lot of land.* 尽管小型风力发电机在许多地方都有经济意义, 但因为需要占用大量土地, 所以并不

适用于所有人。

- 13 Back in the late 1990s, even many **eminent** people were vague about digital technology. (Para. 6)

**Meaning:** Back in the late 1990s, even many famous and respected people were unsure about digital technology.

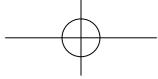
★ **eminent:** *a.* famous, important, and respected 著名的; 杰出的; 显赫的  
*It has been very rewarding for the teacher to see so many of his students go on to become eminent lawyers, judges, and scholars.* 看到他这么多学生后来成为著名的律师、法官和学者, 这位老师很有成就感。

- 14 They **underestimated** its massive impact, thinking mobile phones were an unrealistic idea and going wireless with the Internet of Things seemed to be the distant future. They never imagined what it would be like today. Smartphones are now **unquestionably popularized**. (Para. 6)

**Meaning:** They thought digital technology would have a much smaller impact than it has actually had. They considered mobile phones an impractical idea for large-scale digital communication. They also believed that wireless communication through the Internet of Things was something that wouldn't be available until the far future. They never imagined what the situation would be like today. There is no doubt that smartphones have now become very popular and common.

★ **underestimate:**

*v.* think or guess that sth. is smaller, cheaper, easier, etc. than it really is (对...) 估计不足; 低估; 看轻  
*At first, traditional retailers were reluctant to set up their own online stores because they underestimated the power*



of Internet sales. 起初, 传统零售商不愿意开网店, 因为他们低估了互联网销售的力量。

vt. think that sb. is not as good, clever, or skillful as they really are 轻视, 小看(某人)  
*Her plan was really brilliant. Clearly we had underestimated her from the very beginning.* 她的计划真的很棒。很显然, 我们从一开始就小看了她。

★ **unquestionably:** *ad.* used to emphasize that sth. is certainly true 毫无疑问地; 无可置疑地; 肯定地

*Summer is unquestionably my favorite season, because I just love the smell of the trees and fruits on this island.* 夏天无疑是我最喜欢的季节, 因为我很喜欢岛上树木和水果的味道。

★ **popularize:** *vt.*

1) make sth. popular with many people 使受欢迎; 宣传; 推广

*The music she helped popularize is a blend of old-time Mexican folk music and contemporary U.S. pop.* 她帮助推广的音乐融合了古老的墨西哥民间音乐和当代美国的流行音乐。

2) make a difficult subject or idea able to be easily understood by ordinary people 使通俗化; 使大众化; 使易懂

*Most general newspapers have sections in which they discuss scientific progress and popularize scientific discoveries.* 多数大众报纸都会有讨论科学进步和普及科学发现的版块。

15 With 4G and 5G being used, virtual proximity will reach a whole new level beyond what is possible with our current apps. (Para. 6)

**Meaning:** With the use of 4G and 5G, virtual closeness will reach an entirely new level that exceeds what is possible with our current apps.

16 Furthermore, **automation** and **robotization** will undoubtedly have significant implications for both blue-collar and white-collar work, with about half of the jobs giving way to computerization. (Para. 7)

**Meaning:** What's more, there is no doubt that the use of computers, machines, and robots to perform various tasks will have a great impact on both blue-collar and white-collar jobs, and about half of the jobs will be replaced by computers.

★ **automation:** *n.* [C] the use of computers and machines instead of people to do a job 自动化

*This express delivery company is making a comprehensive automation plan that involves large-scale use of robots to sort letters and packages.* 这家快递公司正在制定一项全面的自动化计划, 该计划将大规模使用机器人来分拣信件和包裹。

★ **robotization:** *n.* [U] the introduction of robots to carry out various tasks 自动化; 机器人化  
*Increasing robotization of factories is transforming traditional manufacturing industries, creating new opportunities for businesses and workers alike.* 工厂自动化程度的不断提高正在改变传统制造业, 为企业和工人创造新的机会。

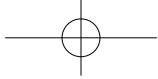
17 This will **erode** many people's confidence in landing jobs in cities. So contemplating your future career prospects is a must now. (Para. 7)

**Meaning:** This will cause many people to become less confident about finding jobs in cities. Therefore, you must consider the possibility of your future career now.

★ **erode:** *v.*

1) gradually reduce sth. such as sb.'s power or confidence 逐步损害, 逐渐削弱(权力或信心)

*His imagination of that position was*



*gradually eroded as he began to understand its daily duties.* 当他开始了解这份工作的日常职责时, 他对该职位的幻想逐渐破灭了。

- 2) gradually destroy the surface of rock or land so that it begins to disappear, or be gradually destroyed in this way 侵蚀; 腐蚀; 风化

*The waves created by large ships as they sailed to and from the port severely eroded the now treeless riverbanks.* 大型船只进出港口时带来的波浪严重侵蚀了本就树木全无的河岸。

### Note

**sth. is a must:** sth. is absolutely necessary; you must do or have sth. in a particular situation ...是必不可少的; (在某种情况下) 必须要..., 必须有...

*Public transportation is limited in a small town like this, so for most people a car is a must.* 像这样的小镇上公共交通很有限, 所以对大多数人来说, 汽车是必不可少的。  
*If you are planning to stay overnight in the mountains, warm clothes are a must.* 如果你们打算在山里过夜, 必须要有保暖的衣服。

- 18 Removing the advantages of city-living leaves only its disadvantages, such as the hectic pace of life, **constraints** on household or rent **expenditure**, and little available space for personal **recreation**. (Para. 8)

**Meaning:** Once the advantages of living in cities disappear, there are only disadvantages left. For example, your life is busy every day and you have to do everything quickly; you have limited financial ability to pay for family needs or to pay rent; and you can't easily find a space for personal leisure activities.

★ **constraint:** *n.*

- 1) [C] sth. that limits your freedom to do what you want 限制; 束缚; 约束力  
*Due to time and financial constraints, the research team determined that the*

*number of schools to be surveyed should be reduced by half.* 因为时间和财力的限制, 研究团队决定将调研的学校数量减半。

- 2) [U] control over the way people are allowed to behave, so that they cannot do what they want 行为约束

*These open-ended questions provide students the opportunity to respond without constraint and help them develop critical thinking abilities.* 这些开放式问题为学生提供了自由回答的机会, 帮助他们培养思辨能力。

★ **expenditure:** *n.*

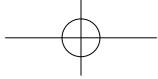
- 1) [C, U] money spent by a government, organization, or person 花费; 开销; 支出  
*Businesses were cautious about investing, and capital expenditure was flat after a 0.1percent decline in the previous three months.* 企业对投资很谨慎, 资本支出在前三个月下降了0.1%之后保持平衡。

- 2) [U] the use of time, money, energy, etc. doing sth. 耗费; 使用  
*It is very likely that such a big research project may require the expenditure of several million dollars.* 这么大的一个研究项目很可能需要耗费数百万美元。

★ **recreation:** *n.* [C, U] an activity that you do for pleasure or amusement 消遣; 娱乐

*If you don't have any time for recreation, exercise, friends, house duties, or romance, you may need to seriously consider making a change in your life.* 如果你没有任何时间娱乐、锻炼、交友、做家务或谈恋爱, 那么你可能需要认真考虑改变一下你的生活。

- 19 If you are in a financially **vulnerable** state, or worry about living **on the fringe of society**, you may feel compelled to work harder and change your **status quo**. (Para. 8)



**Meaning:** If you don't feel financially secure or worry that you are not part of mainstream society, you may feel a strong need to work harder and change your situation.

★ **vulnerable:** *a.*

- 1) easily damaged or hurt by sth. negative or harmful 脆弱的; 易受伤的  
*Supporting the most vulnerable members of our society should not be viewed as an expenditure, but as a contribution to the eradication of poverty and inequality.* 帮助社会中最弱势的那些人不应被看作是一项开销, 而应被看作是对消除贫困和不平等的贡献。
- 2) easy to attack or criticize 易受攻击的; 易受责难的  
*He knew clearly that his theory was very vulnerable as it was poorly tested and badly constructed.* 他清楚地知道自己的理论很薄弱, 因为这个理论没有经过充分的验证, 构建也不完善。

★ **fringe:** *n.* [C]

- 1) the outer or less important part of an area, group, or activity (地区或群体的) 边缘, 外围; (活动的) 次要部分  
*The house he rented was close to a lake, and the yard ended at a line of trees, the fringe of a thick wood.* 他租住的房子附近是一片湖, 院子的尽头有一排树木, 是一片茂密树林的边缘。
- 2) (*BrE*) short hair that hangs down over your forehead 刘海; 额前短垂发  
*My hair grows pretty quickly and I found I'd have to have my fringe cut every other week, or else it would be in my eyes.* 我的头发长得很快, 我发现我必须每隔一周剪一次刘海, 否则它就会挡住我的眼睛。

★ **on the fringe(s) (of sth.):**

- 1) not completely belonging to or accepted by a group of people who share the same job, activities, etc. 属于(…的)边缘的

*We should make greater efforts to extend the economic development to people who are on the fringe of society.* 我们应更加努力让经济发展惠及社会边缘人群。

- 2) at the part of sth. that is farthest from the center 在(…的)边缘; 在(…的)外围  
*The land we are now standing on was once a large ranch on the fringe of the National Park.* 我们现在站着的地方曾经是一个很大的牧场, 位于国家公园的边缘。

★ **status quo:** *n.* the state of a situation as it is 现状

*We should never be satisfied with the status quo, but constantly look at what we need to do in order to improve the services we provide to our customers.* 我们永远都不应该满足于现状, 而是要不断思考我们需要做些什么来改进我们为客户提供的服务。

- 20 Without a clear way out – the way to live better – this mental state can cause **anguish** and distress, a **breeding ground** for bigger problems. (Para. 8)

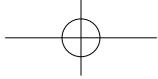
**Meaning:** If you can't see clearly how you can improve your life, this may lead to feelings of extreme worry and unhappiness, and these feelings can create even bigger problems.

★ **anguish:** *n.* (*fml.*) [U] mental or physical suffering caused by extreme pain or worry (精神或身体上的) 极度痛苦

*When we see others enduring such difficult circumstances, we often feel a merciful impulse to try to relieve their anguish.* 当看到其他人身处如此艰难的境况时, 我们常会产生恻隐之心, 试图减轻他们的痛苦。

★ **breeding ground:** *n.* [C]

- 1) (~ **for**) a place or situation where sth. bad or harmful develops (坏事物的) 滋生地, 温床  
*These streets, with no lights and few people in the night, are nothing but a*



*breeding ground for trouble.* 这些街道夜里没有灯光，很少有人，往往是麻烦滋生的温床。

- 2) a place where animals go in order to breed (动物的)繁殖地

*There is no doubt that wetlands are extremely valuable as they provide vital breeding grounds for birds.* 毫无疑问，湿地非常有价值，因为它们为鸟类提供至关重要的繁殖地。

- 21 **Simply put**, this means urban areas become much warmer and more **humid** than their **rural** surroundings. (Para. 9)

**Meaning:** To express it in simple words, this means that urban areas become much warmer and wetter than the rural areas around them.

- ★ **simply put / put simply:** if explained in a clear and simple way / if explaining it in a clear and simple way 简单地  
*Simply put, it was much easier for a music band to become famous in the 1960s since there were fewer entertainment choices back then.* 简单地说，乐队在 20 世纪 60 年代成名要容易很多，因为那时的娱乐选择较少。

- ★ **humid:** *a.* hot and wet in a way that makes you feel uncomfortable (天气)潮湿(炎热)的  
*I opened the weather app on my phone and had a look at the weather report, which predicted a hot and humid summer day.* 我打开手机上的应用软件看了看天气预报，预测将会是一个炎热潮湿的夏日。

- ★ **rural:** *a.*  
 1) happening in or relating to the countryside, not the city 农村的；乡村的；田园的  
*One of the many joys of living in a rural community is to give our children the opportunity of learning to love and care for animals.* 生活在乡村社区的众多乐趣之一就是让我们的孩子有机会学会爱护动物。

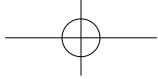
- 2) like the countryside or reminding you of the countryside 像农村的；使人想起农村的  
*Although Munich is Germany's third largest city, it has a more rural atmosphere compared to other cities such as Berlin or Hamburg.* 虽然慕尼黑是德国的第三大城市，但与柏林或汉堡等其他城市相比，它更具有乡村化的氛围。

- 22 Dark surfaces absorb sunlight more effectively, and the **thermal** properties of concrete and steel indicate they contain far more heat than plants. Plants cool their surroundings through **evapotranspiration**; concrete and steel are unable to do this. (Para. 9)

**Meaning:** Surfaces which are dark in color take in sunlight more effectively, and the physical properties of concrete and steel allow them to contain much more heat than plants. Plants make their surroundings cooler through the evaporation and transpiration of water, but concrete and steel cannot do this.

- ★ **thermal:** *a.* (only before noun)  
 1) relating to or caused by heat 热的；热量的；由热引起的  
*Research shows that these new materials and technologies are making it possible for us to utilize thermal energy more efficiently.* 研究表明，这些新材料和新技术能够让我们更有效地使用热能。  
 2) made from special material to keep you warm in very cold weather (衣服)保温的，保暖的  
*We each had a lightweight thermal blanket, which kept us warm the night we had to stay in a cave.* 我们每个人都有一条轻薄的保暖毯，我们不得不待在山洞的那一夜就是用它来保暖的。

- ★ **evapotranspiration:** *n.* [U] the process by which water moves from the earth to the air through evaporation and transpiration



(= water lost from plants) 蒸散  
*Evapotranspiration involves processes of water evaporation and transpiration from plants.* 蒸散作用涉及水蒸发和植物蒸腾等过程。

23 Consequently, heat islands can significantly decrease air and water quality, which is **catastrophic** since it brings diseases, **ailments**, and **allergies**. (Para. 9)

**Meaning:** As a result, heat islands can cause big decreases in air and water quality. This has serious effects since it causes various diseases, illnesses, and adverse reactions.

★ **catastrophic:** *a.* causing a lot of destruction, suffering, or death 灾难性的; 毁灭性的  
*To avoid catastrophic climate change, we must end our dependence on coal and invest in renewable energy.* 为了避免灾难性的气候变化, 我们必须停止对煤炭的依赖, 投资开发可再生能源。

★ **ailment:** *n.* [C] an illness that is not very serious (不严重的) 疾病; 微恙  
*Plant-based products have been used to treat various ailments, and now they have become part of traditional medicine.* 植物性产品已经用于治疗各种疾病, 现在它们已成为传统医药的一部分。

★ **allergy:** *n.* [C, U] a medical condition in which you become ill or in which your skin becomes red and painful because you have eaten or touched a particular substance 过敏性反应; 过敏症  
*To put things simply, the best way to avoid the signs and symptoms of a skin allergy is to avoid exposure to known allergens.* 简单说, 避免皮肤过敏迹象和症状的最好方法是避免接触已知的过敏原。

24 Another phenomenon that is **associated with** the decreasing **desirability** of cities is that not every city is growing. (Para. 10)

**Meaning:** Another situation related to the decreasing attraction of cities is that not all cities are becoming larger.

★ **be associated with:** be related to a particular subject, activity, etc. 与...有关  
*It is found that the growth of sales is associated with both product quality and customer loyalty.* 人们发现, 销售量的增长与产品质量和用户忠诚度均有关系。

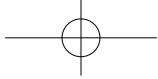
★ **desirability:** *n.* [U] the quality of being worth having 欲求; 希求  
*We discussed the desirability of expanding the organization's global reach through the admission of new members and enhanced engagement with other major countries.* 我们讨论了通过吸纳新成员和加强与其他主要国家的合作来扩大组织全球影响力的必要性。

25 The departure of large employers from an area, unable to **keep** their business **afloat**, can put cities in an economic dilemma. (Para. 10)

**Meaning:** If large companies or organizations leave an area because they are unable to maintain their business there, this can put cities in a difficult economic situation.

★ **afloat:** *a.* (not before noun)  
 1) having enough money to operate or stay out of debt 经济上周转得开的; 不欠债的  
*Due to continuing losses from rising oil prices, the airline had to sell off assets to keep afloat.* 因油价上涨造成连续亏损, 这家航空公司不得不抛售资产以维持运营。  
 2) floating on water 漂浮的  
*The luxury ship had a short life. When it sank, it had been afloat for only two years.* 那艘豪华轮船的寿命很短, 沉没时仅仅航行了两年。

★ **keep (sth. / sb.) afloat:**  
 1) have enough money to keep sth. or sb. in operation or out of debt (使) 经济上周转



得开;(使)不欠债

*He faced numerous hurdles and spent many years struggling to keep his company afloat. Fortunately, his perseverance and hard work paid off in the end.* 他面对过许多困难,并花了多年时间设法使公司维持经营。幸运的是,他的坚持和努力最终都得到了回报。

- 2) keep sth. or sb. in a state of floating on water (使)漂浮

*The storm raged on for hours, but the man managed to keep his boat afloat with the help of his son.* 暴风雨肆虐了数小时,但是那位男子在儿子的帮助下设法使船漂浮着。

- 26 This starts a **vicious circle** involving falling housing demand and prices, a lack of money to maintain properties, and declining tax incomes, possibly provoking a new financial crisis. (Para. 10)

**Meaning:** This starts a repetitive circle in which one problem leads to another. The problems include decreases in housing demand and prices, shortages of money to maintain houses, and decreases in tax revenue. Such a situation may cause a new financial crisis.

★ **vicious:** *a.*

- 1) violent and cruel in a way that hurts sb. physically 凶险的; 会造成伤害的  
*Some people think the gorilla is a vicious animal, yet from the movie you can see that they're gentle giants.* 有些人认为大猩猩是很凶猛的动物,但是从这部电影中你可以看出它们是很温柔的巨型动物。
- 2) very unkind or unpleasant 狠毒的; 恶毒的; 恶意的  
*The police arrested three motorcyclists who were considered to be involved in a vicious attack on an innocent victim.* 警方逮捕了三个骑摩托车的人,他们涉嫌参与了对一名无辜受害者的恶意袭击。

★ **vicious circle:** *n.* (also **vicious cycle**) [sing.]

a situation in which one problem causes another problem that then causes the first problem again, so that the whole process continues to be repeated 恶性循环

*With the help of experts, the government has taken effective measures to break the vicious circle of unemployment and slow growth.*

在专家们的帮助下,政府已采取有效措施来打破失业和经济低增长的恶性循环。

- 27 With automation and artificial intelligence leading to large job reductions in many industries, we may expect to see more shrinking cities. (Para. 10)

**Meaning:** Automation and artificial intelligence are causing large decreases in jobs in many industries. Because of this, we are likely to see more cities becoming smaller.

- 28 Given the many downsides of cities, why should we still move into cities when their **leverage** and vigor are diminishing? (Para. 11)

**Meaning:** Considering that cities have so many disadvantages, why should we still move there when their influence and development speed are declining?

**Note**

**given sth. / that:** taking sth. into account; considering 考虑到; 鉴于

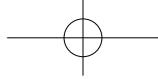
*Given my busy schedule, I decided not to make any plans for our wedding anniversary this year.* 考虑到繁忙的日程,我决定对今年的结婚纪念日不做任何计划。

*Given that online shopping is so convenient, physical stores will need to give customers new reasons to visit them if they are to survive and thrive.* 鉴于网上购物如此方便,实体店要想生存和发展,就需要给顾客提供新的光顾理由。

★ **leverage:** *n.* [U]

- 1) power to influence people and get the results you want 影响力

*We expect that by working with these*



*renowned companies, we will increase our leverage in the fashion industry.* 我们期望通过与这些知名公司合作，能够提升我们在时尚行业的影响力。

- 2) the action, power, or use of a lever 杠杆作用；杠杆力量；杠杆的使用

*A baby may use a chair, a table, or any other object in the room for leverage to stand. So, make sure they are sturdy enough.* 婴儿可能会使用椅子、桌子或房间里的任何其他物体来支撑自己站立，所以要确保这些东西足够结实。

- 29 Yet, it seems that almost everybody in the world assumes urbanization will remain and continue. Have they ever thought about the cumulative effects of urbanization? (Para. 11)

**Meaning:** Despite this, many people in the world seem to believe that urbanization will remain and continue. Have they ever thought about the fact that the negative effects of urbanization will become more and more serious over time?

**Meaning beyond words:** The author implies that many people still believe cities are better places to live despite the signs that cities may face more serious problems in the future.

- 30 Deurbanization is **imperative**. While the advantages of a city may outweigh the disadvantages for some people, it's no longer the case for everyone. (Para. 12)

**Meaning:** Deurbanization is absolutely necessary. Although the advantages of a city may be greater than the disadvantages for some people, urban areas are no longer attractive for everyone.

★ **imperative:**

- a. extremely important or urgent 极重要的；紧急的；迫切的

*Data analysis is the lifeline of any*

*business, and hence it is imperative that our students develop the ability to analyze and interpret data.* 数据分析是所有行业生命线，所以我们的学生必须培养分析和理解数据的能力。

- n. [C] sth. that is very important and urgent 必要的事；紧急的事

*If you are building your own home, you should plan energy-saving insulation features as an imperative to achieve your eco-friendly goals.* 如果你打算建造自己的房屋，就应该规划好节能保温功能来达到环保目标。

**Note**

**while:** conj. in spite of the fact that; although 虽然；尽管

*While I didn't like his works when I was in high school, now I find them quite interesting to read.* 尽管高中时我不喜欢他的作品，但是现在我觉得读起来很有趣。

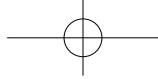
- 31 We have moved toward cities because they're where the opportunities used to be, but we can **deduce** that the prospects of the future will be somewhere else. (Para. 12)

**Meaning:** We have moved toward cities because they were places of opportunities, but now we are beginning to understand that the opportunities of the future will be somewhere else.

- ★ **deduce:** vt. (fml.) use the knowledge and information you have in order to understand sth. or form an opinion about it 推论；推断；演绎

*I thought about it for a while, but still couldn't figure out how they acquired that information and what they had deduced from it.* 我想了一段时间，但仍旧搞不清他们如何得到了那些信息，并从中推断出了什么。

- 32 Therefore, let's **bid farewell to the heartland** of major cities and embrace the trend of deurbanization! (Para. 12)



**Meaning:** Therefore, let's say goodbye to the center of big cities and welcome the trend of deurbanization.

★ **bid farewell to:** say goodbye to sb. or sth.  
告别; 向...道别

*I realized it was time to be courageous and bid farewell to the things of the past.* 我意识到是该鼓起勇气告别过去的一切了。

★ **heartland:** n. [C]

1) (**the ~**) the central part of a country or area of land 中心区域

*Luoyang, located in the heartland of China, is one of the birthplaces of the ancient Chinese civilization.* 洛阳位于中国的中心地带, 是中国古代文明的发祥地之一。

2) the most important part of a country or area for a particular activity, or the part where a political group has most support (国家或地区的) 心脏地带, 最重要地区; (某政党占优势的) 根据地, 大本营

*In those years, this region, which was the former heartland of the nation's industry, had very high unemployment rates.* 那些年, 这个曾是国家工业中心的地区一直有很高的失业率。

related to city life and urban design in the future such as *fine-tune operation, in-depth monitoring, and tangible / intangible improvement.*

To familiarize students with the selected collocations from this unit, the teacher can involve students in a matching exercise using the collocations provided below. The words can be simply listed on the board or passed out as a worksheet, whichever is more convenient. Students are supposed to draw lines connecting possible collocations they have seen in the reading texts.

#### Text A

*unparalleled level, massive impact, easy availability, actively improve, optimal use / safety / route, core functionality, sustainable / prosperous / inclusive future, highly efficient, effective access, minimal waste*

#### Text B

*profound change, substantial quantity, virtual proximity, significantly decrease, close quarters, reap the benefits, cumulative effects, embrace the trend*

Besides phrases describing urban life and future cities, there are quite a few useful collocations for possible problems faced by modern cities: *excess / waste-prone development, limited resources, economic dilemma, and declining tax income.*

## Collocation

This unit focuses on the theme of urban development, especially some emerging trends related to new advances in technology. Students can easily link the topic to their own observations, experiences, and ideas about modern and future city life.

The two texts provide many useful expressions to describe the structure, management, and features of modern cities such as *public transit, development roadmap, urban cluster, and magnet for wealth / money / services / opportunities / people.* They also contain a number of collocations

## PART II

# KEY TO EXERCISES

## Section A

### Pre-reading activities

#### 1

- 1 From this picture, I can learn that there are many potential factors that contribute to a city being considered “smart”. They include a smart energy system, a smart transportation system, a smart public safety system, a smart healthcare system, open data usage, intelligent shopping methods, smart homes, smart buildings, etc. All of them are related to the availability of highly developed Internet technology.
- 2 Compared with the ideas of a smart city in the picture, I think the city I’m living in now is very smart in some respects. For example, traffic controllers can use real-time data to improve the flow of vehicles around the city; streets and buildings are equipped with advanced monitoring facilities to protect our safety; smart garden devices can measure soil moisture and water plants in time to ensure that they get the right amount of water. But to me, our city is still not so smart when it comes to car parking, waste management, street lighting, etc. Nevertheless, it’s good to see that the municipal government is taking steps to make it better and smarter.

#### 2

In my opinion, the three most important goals of a smart city should be A, B, and D, namely efficiency of services, safety & security, and sustainability. I think these three goals aim to

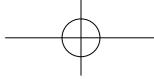
solve the most serious problems faced by cities today. As for C (Mobility), though a smart transportation system has its role to play, I think easy mobility in a city depends more on the building of more roads and metro lines. And as for E (City reputation), I don’t think it’s directly related to residents’ daily life, so it shouldn’t be given too much emphasis though it is desirable for a city to have an improved image and reputation as well.

### Reading comprehension

#### Understanding the text

##### 1

- 1 Because the traditional model of urbanization has greatly depended on the abundance and easy availability of fossil fuels, which has caused a waste of resources and has made a devastating impact on the environment and public health.
- 2 There are two reasons. First, a smart city will make optimal use of all the interconnected information to better control its operations and thus make the best use of limited resources. Second, a smart city will ensure a better quality of life by providing a sustainable, prosperous, and inclusive living environment for its inhabitants.
- 3 There are a variety of contributing factors, but mainly two. First, cities will remain attractive to people owing to the various benefits they provide, and continue to be the core engines of growth for all modern societies. Second, advanced technologies are now part of our daily life, including smartphones, cellular broadband, embedded computing, as well as IoT, cloud computing, big data, and AI.
- 4 The key features of a smart city include efficient design, maximization of green spaces, minimization of traffic jams, sustainability



of infrastructure and buildings, optimal safety, effective access to facilities, and quick responses to emergencies.

- 5 The author gives an example of how a smart city will respond in case of a fire breakout in a building.
- 6 The ultimate goal is to enable cities to get rid of their traditional problems and create living spaces where the inhabitants feel safe, comfortable, and efficient without being troubled by undesirable factors.
- 7 To realize the ultimate goal of smart cities, China has been making huge investments in the development of technologies, such as 5G technology and IoT.
- 8 It suggests that China has made a clear plan on how to advance its development of urbanization and smart cities.

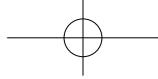
## Critical thinking

### 2

- 1 I think building smart cities is significant for China in many ways. For example, it can drive economic growth and create jobs, encourage technological innovations and improve efficiency, offer sustainable urban development solutions, and create modern, safe, and convenient environments for citizens to live in. All these are essential for China to become more prosperous and stronger and ensure its people a happier life.
- 2 The examples I can think of are:
  - Traffic flow can be managed because sensors installed in the city can collect data about real-time traffic conditions and help city managers adjust the traffic flow in these areas. As a result, time and gasoline can be saved, and less air pollution will be caused.
  - Intelligent street lights with efficient lamps can save energy and costs because they are programmed to dim or brighten automatically.
- 3 I think the challenges that need to be addressed may include:
  - Smart city development requires advanced infrastructure, which most of the current cities don't have yet and will need generous funding and full government support to build.
  - Security issues can be challenging to smart cities. With IoT devices all interconnected, an operation system could be completely paralyzed in case of a cyberattack.
  - Privacy is an issue of concern. People may worry whether their personal data collected by IoT sensors will be improperly used.
  - Collaboration between technology firms and construction firms is a must and could be complicated sometimes.
  - Gaining the support of the city's citizens and maximizing their engagement could be difficult and involve a lot of work.
- 4 I think the following four steps should be followed while we decide on a smart city project.
  - 1) Collect data. Every smart city project starts with data. We need to collect new data, categorize them, and integrate them into data pools for analysis.
  - 2) Identify pain points. Every urban community has its own pain points, from traffic congestion to limited parking availability

- The sewage system in a smart city can be free from problems such as blockages and overflows because sensors installed in the system can send alerts when the sewage water reaches certain limits.
- Smart garbage bins, being self-powered with solar technology, have the ability to communicate in real time when they are full, preventing overflows and reducing the frequency of collections.

From these examples, we can see that by using embedded sensors, city managers can improve city services and enhance urban sustainability.



and energy shortage. We need to identify the most pressing issues for the smart city project to tackle.

- 3) Work out the financing and budgeting plan. Smart city projects are expensive, and we should try to get funding from various sources, including city budgets, businesses, individuals, government grants, and crowdfunding.
- 4) Launch a pilot project. Smart city projects are irreversible. Being able to test how your project will work, such as how it will collect and process feedback, is a must. So, it's wise to launch a pilot project first.

5 I think we can contribute to the development of smart cities in two ways.

- 1) Get ourselves mentally and technically prepared for urban smartness. For example, we should:
  - raise our awareness about smart services in the city through various sources;
  - learn to use smart urban apps and software.
- 2) Do what we can to help the city better implement smartness. For example, we can:
  - shift to smart devices in the home environment;
  - help collect real-time data and user opinions for city managers to optimize smart services;
  - help children and older people to get involved in smart city trends.

## Language focus

### Words in use

**3**

- |               |           |                 |
|---------------|-----------|-----------------|
| 1 poised      | 2 lavish  | 3 instantaneous |
| 4 tangible    | 5 hurdles | 6 streamline    |
| 7 detrimental | 8 evoke   | 9 hypothesis    |
| 10 escalating |           |                 |

### Word building

**4**

- |                |               |
|----------------|---------------|
| 1 bankruptcies | 2 atmospheric |
| 3 delicacies   | 4 urgency     |
| 5 idiomatic    | 6 geographic  |
| 7 vacancies    | 8 secrecy     |
| 9 microscopic  |               |

### Banked cloze

**5**

- |      |      |      |      |       |
|------|------|------|------|-------|
| 1) B | 2) F | 3) N | 4) M | 5) G  |
| 6) A | 7) C | 8) E | 9) K | 10) L |

### Expressions in use

**6**

- 1 is / has been projected to
- 2 within his grasp
- 3 are modeled on
- 4 rid ... of
- 5 within a moment's notice
- 6 To that end
- 7 equate ... to
- 8 On top of

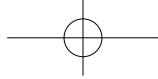
## Structure analysis and writing

### Structured writing

**7**

As smartphones are used by almost everyone almost every hour, many people today have come to take these do-it-all devices for granted. But if we are willing to pause for a while and think about this technology, we will easily come with a long list of changes it has brought to our life.

First, smartphones have greatly changed the way we connect with people. Via smartphones, we can instantly reach almost anyone through email, instant messages, social media, or other apps. What's more, we can do this without virtually spending any money. Sharing documents, photos, audios, and videos with our friends also becomes



super easy and fast through social apps installed on our smartphones.

Second, smartphones have greatly changed the way we access information. Now we can use our cell phones to read books and news reports, consult dictionaries and other resource materials, and check weather forecasts and traffic conditions. We can also use them to ask questions and receive answers from our teachers and classmates, take classes and get tutoring wherever we like.

Third, smartphones have greatly changed the way we shop. Through mobile payment apps, we can make purchases in various types of stores any time of the day, and even during midnight hours. If we are not satisfied with a purchase, we can contact customer service directly and get refunded easily if we want.

There are countless other changes I can list if I continue. With smartphones enabling us to live in such a convenient way today, it's not hard to imagine how helpless we would feel without them.

## Section B

### Reading skills

#### 1

- 1 This text is mainly about the trend of deurbanization / the trend of moving away from cities.
- 2 The main factor that triggers deurbanization is technological development. The specific areas of technology discussed in the text include decentralized supply systems, digital technology, and automation and robotics.
- 3 Paras. 8-10 focus on the disadvantages of living in cities. The author mentions a number of downsides of cities such as the hectic pace of life, constraints on household or rent expenditure, the

formation of heat islands, and potential problems caused by the shrinking of cities (e.g. economic difficulties and declining incomes).

### Reading comprehension

#### Understanding the text

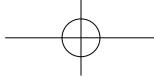
##### 2

- 1 C    2 A    3 D    4 A    5 B  
6 B    7 C    8 D

#### Critical thinking

##### 3

- 1 • Yes, I totally agree with the author. With the popularization of the Internet and other technologies, city-living will lose many of its advantages. As is said in the text, cities attract people primarily because of job opportunities. But in the future when telecommuting becomes the norm, people can live anywhere and work remotely no matter how far away their company is located. Another advantage of cities is convenience. However, this will not be a crucial feature either, as many things we do today in person, such as shopping and borrowing books from a library, can also be done through the Internet, making rural life equally convenient. Still another advantage of cities is their rich social life. But with the wide use of social media, people can now connect with each other no matter where they are. They can meet friends, chat, or even play games together from their comfortable rural homes.
- No, I don't agree with the author. I believe that cities will continue to take the lead in technological innovation, and hence will continue to outperform rural areas. Although some of the advantages cities have today may not be important in the future, other



things will not change. For example, people will still want to enjoy the rich cultural life that cities offer. It is much better to visit a good art museum and appreciate famous pieces of art in person than online. Besides, the advantage of the rich social life in cities will never fade away. Friends can see each other more often and more easily if they live in cities, and they don't have to worry about getting home too late after meeting friends at night. What's more, with the continued development of technology, cities will provide many new benefits that rural life lacks.

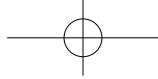
- 2 • I certainly prefer to work remotely from a suburban home. First of all, working from home will save me a lot of time because I do not need to commute to an office. This gives me more free time to stay with my family and pursue my hobbies. Second, working remotely allows for great flexibility in what clothes I wear and how I arrange my workspace. I can wear cozy clothes while working on my computer, which makes me more productive. In addition, with a suburban home, I can have a bigger space to set up my workspace and arrange it in whatever way I like. I would love to have a job that allows remote work after I graduate.
- For me, working on site is better than working remotely. Working on site in an office makes it much easier for me to communicate with others, especially if I am working on something together with a team. Video conferences can never be as effective as face-to-face discussion. Although I may need to commute every day, I do not consider it a waste of time. I can read a book on the bus or subway. Being with people keeps me at pace with the life of the city I live in.
- 3 In my opinion, the three biggest differences between living in a big city and living in a

small town can be:

- Cost of living. Living in a big city is usually more expensive as housing, restaurants, and recreational activities cost more. Living in a small town, on the other hand, can reduce costs for all these things.
- Lifestyle. Living in a big city allows people to have a busier yet more colorful life. On the one hand, city dwellers have to be fast-paced, spending a lot of time commuting and getting much work done every day. On the other hand, they have more choices of recreational activities for their leisure time. In contrast, living in a small town, with fewer recreational choices and less commuting time, makes people's life simpler and more slow-paced.
- Environment. Big cities are often more crowded and have busier traffic, but they also have more beautiful shopping malls, streets, and restaurants. In comparison, small towns are much less crowded and have less traffic, offering people more open space, more peace, and more closely-knit communities.

So, living in a big city and living in a small town can both have pros and cons. Where you decide to live depends on what matters to you most.

- 4 • My hometown is a small village in Jiangxi Province. There are three things I like best about it: clean air, more spacious houses, and healthier food. There are lots of trees in my village, so the air quality is much better than that in cities. My family lives in a large house, which is more comfortable than most apartments in cities. People in my hometown can also eat healthier food. Vegetables and rice are fresher when most families grow their own. What I don't like about my hometown is the lack of job opportunities. Since it is a rural area, there is not much industry except a few small factories. Most people are engaged in agriculture. There are



not many jobs available.

- I am from Guangzhou, the capital city of Guangdong Province. What I like about Guangzhou is its convenience of transportation, vigor of the economy, and abundance of cultural facilities. The city has good public transit, making it easy to get around. Guangzhou is also one of the most economically developed cities in China, and provides people with all types of work opportunities. In addition, there are plenty of cultural facilities such as museums and libraries that residents can easily access. What I don't like about Guangzhou is its congestion and high living expenses. In rush hours, streets are crowded and traffic is slow. People spend a lot of time commuting to work. Living expenses are high. In particular, food and houses are expensive. As a result, life pressure can be high for many people.

- 5 There are several cities I like very much and consider good to live in, such as Qingdao, Xiamen, Shanghai, and Guilin. But if I have to choose one, I will opt for Xiamen with no hesitation. I visited it last summer and fell in love with it on the first day. It is beautiful, with unique island and coastal scenery. The climate is pleasant. It is also becoming a leading innovation center in China, especially in the field of artificial intelligence. Since my major is computer science, it can be a perfect place for me to find an IT job in the future.

### Collocation

4

- |                |                |
|----------------|----------------|
| 1) massive     | 2) minimal     |
| 3) actively    | 4) substantial |
| 5) sustainable | 6) optimal     |
| 7) core        | 8) close       |
| 9) easy        | 10) profound   |

11) reap

13) virtual

12) highly

14) embracing

## Section C

### Translation

Urban-rural integration is a new stage in China's development toward modernization and urbanization. It aims to eliminate the urban-rural dual economic structure through integrated planning for urban and rural development, and through institutional reform and policy adjustment, so that the urban and rural areas will achieve policy equality and complement each other in the mode of industrial development, enabling rural residents to enjoy the same civilization and welfare as urban residents. Only by greatly promoting urban-rural integration can the whole urban and rural economy of our country develop comprehensively and sustainably.

## Unit project

### ► Objectives

- Increase students' understanding of smart cities.
- Develop students' ability to explore and create.
- Improve students' ability to use English in real-life situations.

### ► Teaching tips

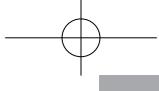
This project needs to be well-prepared before being completed in class.

#### Step 1

Tell students that they are going to act out a play in class and the date they will be asked to do it. Make sure they understand the purpose of the project.

#### Step 2

Divide students into small groups of four to six. Preferably, each group has both male and female students.



### **Step 3**

Assign one member in each group to be the group leader coordinating their group work throughout the whole preparation.

### **Step 4**

Ask each group to follow the directions given in the Student's Book to prepare for the project.

### **Step 5**

Check regularly with each group about the progress of their project.

### **Step 6**

Ask each group to act out their play in class. Get the students to vote for the best actor or actress in each group.

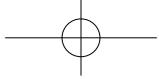
## **PART III**

# **READING PASSAGE TRANSLATION**

## **课文 A**

### **从城市化到智慧城市**

- 1 随着中国向现代化国家转型并已成为经济发展的衡量标尺，城市化正以前所未有的速度发展。据预测，到2050年，居住在城市的人口将增加到近70%。事实上，城市化不仅在重塑社会的物理环境和文化结构，对经济也会产生巨大影响。
- 2 然而，城市生活的模式主要还是围绕20世纪后期的技术、人口以及基础设施需求而展开的。因此，它主要依赖于矿物燃料的充足和易得性。我们可以认识到，这种依赖造成了资源浪费，并严重破坏了环境和公共健康。这也导致了过度消费和浪费倾向的发展，这种发展被证明是有害的。所以，传统的城市化模式已经过时且无法持续。当前，避免问题升级的唯一办法，用现在的行话来说，就是要建设“智慧城市”。
- 3 智慧城市的理念，即基础设施通过软件互相连接起来，并不新鲜，但无可否认，这一想法很酷。谁不想生活在一个依靠数据和证据而非直觉思维来积极改善日常生活的地方呢？从某种意义上说，智慧城市可以被定义为这样一种城市：它对所有可获取的互联信息进行最佳利用，从而更好地理解和控制城市的运行并优化利用有限的资源。
- 4 从居民的角度来说，智慧城市就相当于一个拥有城市所有核心功能的空间，这些核心功能都与技术相融合并且通过技术不断得到提升，从而为居民带来可持续、繁荣并具有包容性的未来。随着越来越多的中国城市开始向“智慧城市”转型，这一理念会越来越受欢迎。
- 5 为什么这样的理念会极有可能成为评判现代发达



城市生活的普遍标准呢？这有多种因素和原因。总的说来，城市是所有现代社会发展的核心引擎。它们为人们提供许多好处——在这里，人们有更多机会寻找各种工作，享受公共交通的便利，共享丰富的资源和利用丰富的设备。

- 6 另一个重要原因则是智能手机、蜂窝宽带以及低功耗高效能嵌入式运算的快速发展。从商业到人类的社会生活，一切都发生了变化。构成智慧城市的参数也随之发生了变化。随着物联网、云计算、大数据和人工智能的融合，城市不再是钢筋水泥建造起来的静态物体；相反，它们有潜力变得高效、安全、设计合理并令人愉悦。
- 7 因此，智慧城市的一些关键特征可以说就是高效的设计、最大化的绿色空间、最小化的交通拥堵、可持续的基础设施和建筑物、对传感器获得的每个数据点进行深入监测而实现的最佳安全性，以及以造成最少浪费的方式对设施进行的有效利用。此外，当城市任何一个地方发生紧急情况时，常规车辆可以被引导到其他可供选择的路线，从而确保事件周边地区的生活受到最低程度的干扰。
- 8 换句话说，现在关于智慧城市的设想是基于这样一个假设：生活场所是围绕人类生活的便利而建造的，从设计、建造、监控功能到维护，技术融入到了方方面面。整个城区的建造以绿化面积最大化并确保最顺畅的交通流动为目标。因此，能够对运行进行最精细的调整。
- 9 详述一下，如果某个建筑物发生火灾，不仅可以通过智能手机立即告知建筑物内的居民，而且还可以将他们引导到最近的出口和安全之地。另外，事件的消息也会在整个系统中即时传达，因而可以使建筑物的安全措施被立即启用。更重要的是，紧急搜救服务可以被迅速派出，而且搜救车辆所经过的路段还会被清空，最佳路线也会提供给他们。
- 10 在城市生活的各个方面进行类似改进和提升的可能性是巨大的，但生活质量显性及隐性的改善并不是唾手可得的，因为许多大城市已经变得难以管理。智慧城市的最终目标是消除城市的传统问题，并创造美好的生活空间。在这里，居民能感到安全、舒适、高效，且没有不必要或者令人不快的障碍。

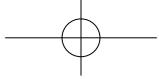
11 为此，中国已投入数十亿资金来设计和定义未来的标准——从5G技术到物联网——来努力唤起公众对这些卓越项目的最佳响应。可以预见，这不仅有益于中国，也将有益于世界。

12 中国南方城市深圳是寻求建设智慧城市的先驱城市之一。国家发展规划里另一个令人瞩目的计划就是大规模京津冀（即北京—天津—河北）城市群的建设，目的在于优化区域经济结构，简化多方面的城市生活，并实现协调发展的新模式。所有这些对未来城市的设计都是非常宝贵的，因为未来几年、几十年的发展都将以现在取得的成果为蓝本。毫无疑问，中国将继续推进智慧城市的发展。

## 课文 B

### 迎接逆城市化趋势

- 1 尽管那次由房地产泡沫引发的国际金融危机发生在2007年至2010年间，但是我们许多人至今仍心有余悸，难以忘记。下次金融危机很可能会集中在城市，因为我们或许很快将看到城市化的结束。许多人可能认为这是夸大其词——毕竟城市为人们提供了无数的益处。的确如此。但现在的新技术正在使城市化变得没有必要，所以逆城市化的时代就要来了。
- 2 城市化或集中化带来的邻近性（或者说近距离）减少了人们的通勤时间和花费，这是有道理的。邻近居住的人越多，销售市场就越大。由于工厂、学校和服务商都近在咫尺，因此城市还提供了很多就业和教育机会。此外，邻近性也使人们可以分担公路、排水管道和输电线缆等基础设施的费用，因而城市聚集着财富、金钱、服务和机会，也吸引着人们。
- 3 难道那不意味着我们将继续生活在城市里吗？由于第四次工业革命的到来，我不这么认为。第四次工业革命以许多领域出现的技术突破为标志，包括机器人技术、人工智能、纳米技术、生物技术、物联网、自动驾驶汽车等。这些技术正在使人类社会的整个生产和管理体系发生深刻变化。



- 4 这些新型技术将会以某种方式削弱城市的优势。有了新技术，无论是远程办公、网络约会还是在线购物，人们对邻近性的需求将会减少。尽管食物和商品送货上门服务正蓬勃发展，但是新技术并不需要公路，只需要运输，无论是用飞机还是用飞行汽车。
- 5 实际上，日常必需品供应体系的分散化已初露端倪。例如，许多人都是从水龙头获取饮用水，但分散化的取水方式现在能够将空气中的水收集起来并生产大量的净水。分散化的下水道系统也能够处理废水。我们还能够利用太阳能电池板、风力涡轮及活体植物进行发电，从而可以给平板电脑充电、烘焙糕点、为房屋供暖、为汽车供应燃料等。
- 6 在20世纪90年代后期，即使是许多杰出人士也对数字技术不甚了解。他们都低估了它的巨大影响，认为手机是一个不切实际的想法，认为物联网的无线化是非常遥远的事。他们从未想象到今天的情形。智能手机现在已无可置疑地得以普及。随着4G和5G的应用，虚拟邻近度将超越我们当前各种应用程序可能实现的程度，达到一个全新的水平。
- 7 此外，自动化和机器人化无疑对蓝领和白领工作都将产生重要影响，约一半的工作职位都将计算机化。技术也必然创造新工作，但是工作种类将不同，并且和消失的工作相比，数量会很少。这会削弱很多人对在城市找到工作的信心。因此，你必须现在就要考虑未来的职业前景。
- 8 除去优势之后城市生活就只剩下了它的劣势了，例如忙碌的生活节奏、家庭支出或租金支出的限制，以及很少的个人娱乐空间。如果你经济状况比较困难，或者担心自己生活在社会的边缘，你可能被迫更加努力以改变现状。如果没有明确的出路——提升生活水平的出路——这种心理状态就会导致痛苦和苦恼，从而引发更大的问题。
- 9 但是问题远不止这些。城市会产生城市热岛效应。简单地说，这意味着城区会变得比周围的郊区更热、更潮湿。深色物体表面能更有效地吸收阳光，水泥和钢筋的热性能表明它们能比植物吸纳更多热量。植物可通过蒸散作用使四周环境降温，但是水泥和钢筋却无法做到这一点。其结果就是，热岛效应会大大降低空气和水的质量。这会造成灾难性的后果，因为各种疾病和过敏症状都会由此产生。
- 10 另一现象也与城市的受欢迎程度减弱有关，那就是并非每座城市都在变大。如果一些大公司因无法维持业务而离开某个地区，就可能将城市置于经济困境。这会引发包括住房需求萎缩、房屋价格降低、房产维护资金缺乏和税收减少等问题的恶性循环，有可能引发新的金融危机。由于自动化和人工智能导致许多行业就业机会的大规模缩减，预期还会有更多城市走向萎缩。
- 11 鉴于城市的诸多弊端，我们为什么还要在其影响力和活力减弱的情况下搬到城市里呢？我们为什么还要花很多钱密集而居却又得不到什么好处呢？当一切都朝着分散化的趋势发展，继续搬到城市的做法似乎毫无道理。然而，几乎世界上每个人都好像认为城市化仍将存在并继续。那么，他们是否考虑过城市化的累积效应呢？
- 12 逆城市化势在必行。尽管对于一些人来说城市的优势可能大于弊端，但并不再是对每个人都如此。即使一些职业不会受到技术变革的影响，但还是需要考虑城市萎缩的事实。我们朝城市迁移，那是因为过去城市是机会所在，但是我们可以推断未来的前景会在其他地方。因此，让我们挥别大都市的中心地区，迎接逆城市化的趋势吧！