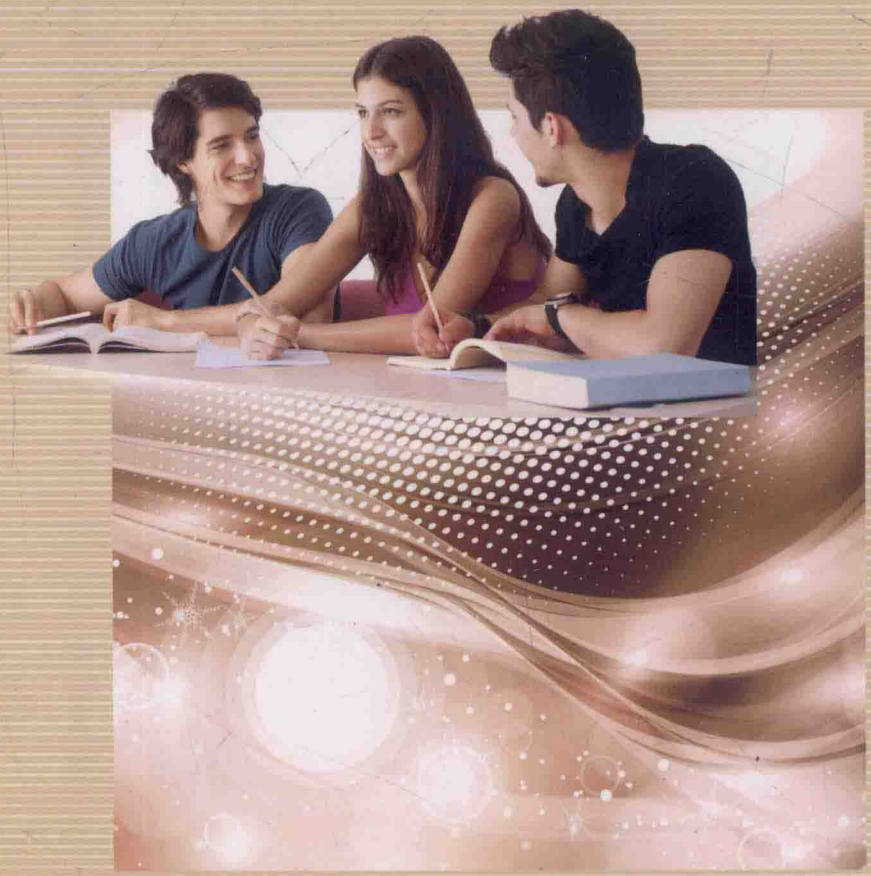
高校英语选修课系列教材·ICT(信息与通信技术)英语系列

ICT英语视听说教程

吴 建 张韵菲 主编

A Coursebook on ICT: Listening and Speaking



南京大学出版社

高校英语选修课系列教材·ICT(信息与通信技术)英语系列

ICT英语视听说教程

A Coursebook on ICT: Listening and Speaking

主　编　吴　建　张韵菲
副主编　康　艳　殷安生　孔　莉
参　编　陶李春　王晓燕　任　芳　殷　健
审　校　王竞雄

南京大学出版社

图书在版编目(CIP)数据

ICT英语视听说教程 / 吴建，张韵菲主编. — 南京 : 南京大学出版社，2016.6

高校英语选修课系列教材. ICT(信息与通信技术)英语系列

ISBN 978-7-305-16953-3

Ⅰ. ①I… Ⅱ. ①吴… ②张… Ⅲ. ①信息技术-英语-听说教学-高等学校-教材②通信工程-英语-听说教学-高等学校-教材 Ⅳ. ①H319.9

中国版本图书馆CIP数据核字(2016)第109275号

出版发行　南京大学出版社
社　　址　南京市汉口路22号　　邮　编　210093
出 版 人　金鑫荣

丛 书 名　高校英语选修课系列教材·ICT(信息与通信技术)英语系列
书　　名　ICT英语视听说教程
主　　编　吴　建　张韵菲
责任编辑　张淑文　　编辑热线　025-83592655

照　　排　南京南琳图文制作有限公司
印　　刷　南京人民印刷厂
开　　本　787×1092　1/16　印张12　字数277千
版　　次　2016年6月第1版　2016年6月第1次印刷
ISBN 978-7-305-16953-3
定　　价　38.00元

网址：http://www.njupco.com
官方微博：http://weibo.com/njupco
官方微信号：njupress
销售咨询热线：(025) 83594756

前　言

ICT(Information Communication Technology)指信息通信技术，是信息技术与通信技术相融合而成的新的概念和技术领域。ICT产业是当今经济社会发展最快的科技领域之一，也是当今经济社会发展的主要推动力量。

本教材面向我国快速发展的ICT产业国际化对语言服务人才的需求，读者对象主要为ICT业内需要使用英语、尤其是以口头与听力形式对外交流的人士，以及面向ICT产业从事英语教与学的老师与同学们。

本教材内容编写围绕ICT十大领域，各成一章。第一章：互联网；第二章：下一代网络；第三章：大数据；第四章：数据中心；第五章：云计算；第六章：人工智能；第七章：物联网；第八章：移动网络；第九章：虚拟现实；第十章：网络安全。每章选取三个长度、难度适中的视频，尽量避免过于专业化，既求知识性，也求趣味性。视频后配有若干听力与口语话题练习。视频和练习参考答案放在南京大学出版社网站(www.njupco.com)“高校教材中心”的“课件下载”中，供读者下载参照。

由于编者水平有限，教材中难免会出现不妥之处，请读者见谅。希望这本教材能为培养ICT产业外语服务人才贡献一份力量。

编　者

2016年5月

目 录

Chapter I Internet

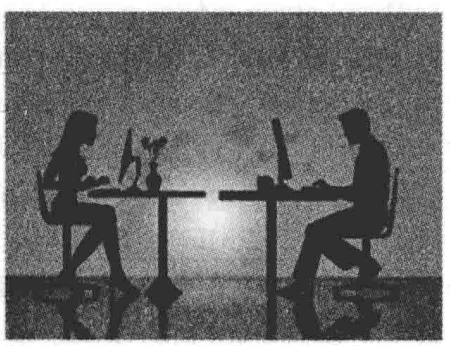
FUN FACTS

Fun Fact A

People who use social networking sites such as Facebook and Twitter will use 10% of their entire life time on these sites.

Fun Fact B

19% of married couples meet online, making it the most successful method for meeting the "one." Following an online introduction the most successful methods for meeting a future wife or husband continues to be through work or friends, with each of these methods getting 17% of married couples together.



Warm-up Activities

1. How much do you know about the Internet?
2. What is the best thing about the Internet?
3. About how many hours a day/week do you use the Internet?
4. Do you think our lives have been improved by the Internet?
5. How can the Internet help you learn English?

Part Ⅰ How Does the Internet Work?

Task Ⅰ Watch the video and answer the following questions.

1. Why is the Internet compared to a game?

2. Why do we call the Internet the network of networks?

3. How is data received by the device on the other end of the Internet?

4. What is Internet Exchange and how does it work?

5. What would happen if part of the Internet collapses?

Task Ⅱ Watch the video again and fill in the blanks in the text.

When you use the Internet, what happens? Whether you go online to chat with a friend, or send mail, or buy a book, or check the weather, watch a movie or study the Peloponnesian war, it feels like there is one wire connecting you directly to the thing you want. But a billion other people are connecting to a billion other things at the

same time. How does that happen? It's really about making agreements. _____ _____. ① It only works if we agree to play by the same rules. Otherwise, it's not much fun. If you can get two or more computers to play together, you have a network. If your friend can do it too, there is another network. But if you both agree that your networks will play the same way, now you can hook the two together. You have an inter-network. The rules we play by are called the _____. ② And as long as we all agree, we can keep adding more devices and more networks until the whole world is connected. That's what the Internet is _____ a network of networks that share each other. _____. ③ Anything you send via Internet is really just the message from one device to another. But it doesn't travel in one big blunk. It gets _____, ④ each one wrapped with info about what it is, where it came from and where it's going. This way, your one message can actually take several different paths to its destination. Then by following the protocol, the receiving device knows how to put it all back together. _____. ⑤ With so many possible connections, there is no single point of failure. _____, ⑥ your data just takes a different path. Even if a big chunk of the Internet gets wiped out, your message can still find its way. But let's say you use one Internet provider and your friend is on a different one, how does your data really get from one network to the other? Some companies _____ _____. ⑦ But more and more traffic is flowing through _____. ⑧ An Internet Exchange is a place where many different organizations come together to interconnect their technology. There may be _____. ⑨ Nearly anybody who lies on network traffic can benefit from the exchange. By connecting in a common place, they save costs and the traffic between them goes faster and much more efficiently. Traditionally, providers have sold each other passage on their networks. But for some providers who regularly exchange traffic, all that buying and selling get to be more trouble than its worth. Many of them saw that if they just agree to meet each other half way, then everybody's cost goes down, and the traffic moves more smoothly. Providers are able to make a single connection to the platform to exchange traffic with many participants. This way of doing things is called peering and it's making the Internet faster and more affordable for everybody. The exchange participants make deals with each other according to mutual benefit, so the peering system tends to regulate itself. It may seem like companies are giving away their services, but in fact, each is providing their part of the whole solution their customers need to most efficiently and reliably exchange traffic. The Internet is open, decentralized and totally neutral. _____. ⑩ No single organization controls it. And that's why it works as well as it does. By agreeing to cooperate, we all make the Internet happen. And that's how the Internet happens.

① _____

② _____

③ _____

④ _____

⑤ _____

⑥ _____

⑦ _____

⑧ _____

⑨ _____

⑩ _____

Task Ⅲ Match the following terms on the left with their definitions on the right.

1. Internet protocol□
   互联网协议
2. packet□
   数据包
3. access provider□
   通路提供商

a. any organization that arranges for an individual or an organization to have access to the Internet

b. a process by which two Internet networks connect and exchange traffic

c. an organization that provides services for accessing, using, or participating in the Internet

4. Internet exchange point□
互联网交互机中心

5. social network site□
社交网站

6. telecom operator□
电信运营商

7. peering□
对等体系

8. Internet Provider□
互联网供应商

9. shared services□
共享服务

10. Internet address□
因特网地址

d. rules for exchanging messages between computers across a single network or a series of interconnected networks

e. unit of data that is routed between an origin and a destination on the Internet

f. web-based services that allow individuals to socialize with each other

g. a numerical label assigned to each device participating in a computer network that uses the Internet Protocol for communication

h. a physical network access point through which major network providers connect their networks and exchange traffic

i. an organization that provides communications services such as telephony and data communications access

j. the provision of a service by one part of an organization or group where that service had previously been found in more than one part of the organization or group

Task Ⅳ Group Work

1. Tell your partners briefly how Internet works.
2. Look up the following terms online and try to explain at least three of them.

(1) Hyperlink	(2) Homepage	(3) Hypertext	(4) Friendly URL
(5) FTP	(6) DNS	(7) Domain	(8) Instagram
(9) Cyberbullying	(10) Digital Footprint	(11) P2P	(12) 404 Error

》Part Ⅱ History of the Internet《

Task Ⅰ Watch the video and answer the following questions.

1. What were the first computers like in the 1950s?

2. What were the problems confronting the early computer users?

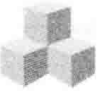
3. Which is better, a centralized network architecture or a decentralized one? Why?

4. How did CYCLADES differ from other early networks?

5. What is the current protocol used by the Internet?

Task Ⅱ Watch the video again and fill in the blanks in the text.

In the year 2009, we send e-mails, make calls over the Internet and discuss topics we take an interest in, even our banking is going virtual. But what we take for granted today was only a vague idea 50 years ago. In order to understand how we got this far, let's go back to 1957 when everything began. Before 1957, computers only worked on one task at a time. This is called batch processing. Of course, this was quite ineffective. With computers getting bigger and bigger, they had to be stored in special cooled rooms. _____. ① Specialists had to be called in to connect them. _____ ② led to a lot of bugs, wasting time and fraying the developers' nerves. The year 1957 marked a big change. A remote connection had to be installed, so the developers could work directly on the computers. At the same time, the idea of Time Sharing came out. This is the first concept in computer technology to share the processing power of one computer with multiple users. On



October 4th in 1957 during the cold war, _____. ③ The fear of a missile gap emerged. In order to secure American leading technology, the US founded the Defense Advanced Research Project Agency in February 1958. At that time, knowledge was only transferred by people. _____ ④ and avoid the doubling up of already existing research. This network would become the ARPANET. Furthermore, three other concepts were to be developed, which are fundamental for the history of the Internet. The concept of a military network by the RAND Corporation in America, the Commercial network of the National Physical Laboratory in England, and the scientific network—CYCLADES in France. _____. ⑤ Let's begin with the ARPANET, the most familiar of these networks. Its development began in 1966. Universities were generally quite cautious about sharing their computers. Therefore, small computers were put in front of the mainframe. This computer, the Interface Message Processor, took over control of the network activities, while the mainframe was only in charge of the initialization of programs and data files. At the same time, the IMP also served as interface for the mainframe. Since only the IMP was interconnected in the network, this was also called IMP subnet. For the first connections between the computers, the network working group developed the Network Control Protocol. Later on, the NCP was replaced by the more efficient Transmission Control Protocol. _____. ⑥ Let's take a short detour to England. Since the NPL network was designed on a commercial basis, a lot of users and file transfer were expected. In order to avoid congestion of the lines, the sent files were divided into smaller packets, which were put together again at the receiver. Packet-switching was born. In 1962, American Fairey Aircraft discovered middle and long range missiles in Cuba, which were able to reach the United States. This stoked fear of atomic conflict. _____. ⑦ To avoid breakdown during the attack, a decentralized network architecture had to be developed, which in case of loss of a node would still be operative. Communication still used to work through radio raves. That would have caused problems in case of an atomic attack. The ionosphere would be affected and the long-wave radio waves wouldn't work anymore. Therefore, they had to use direct waves, which, however, don't have a long range. A better solution was the model of a distributed network. _____. ⑧ Another milestone followed was the development of the French network CYCLADES. Since CYCLADES had a far smaller budget than ARPANET, and thus also fewer nodes, the focus was laid on the communication with other networks. In this way, the term inter-net was born. Moreover, CYCLADES concept went further than ARPA's and the NPL's. _____. ⑨ CYCLADES protocol went through all machines using a physical layer that was implemented into the hardware, providing a direct connection with the receiver and

end-to-end structure. Inspired by the CYCLADES network and driven by the incompatibility between the networks, their connection gained importance everywhere. The phone companies developed the x. 25 protocol, which enabled communication through their service in exchange for a monthly basic charge of course. DARPA's Transmission Control Protocol was to connect the computers through gateways. And the International Organization for Standardization designed the OSI reference model. The intervention of OSI was the attempt to standardize the network from its ends and the channel's division into separate layers. Finally, the TCP assimilated the preferences of the OSI reference model and gave way to the TCP/IP protocol, _____. ⑩ By February the 28th, 1990, the ARPANET hardware was removed, but the Internet was up and running.

① _____

② _____

③ _____

④ _____

⑤ _____

⑥ _____

⑦ _____

⑧ _____

⑨ _____

⑩ _____

Task Ⅲ Match the following terms on the left with their definitions on the right.

1. programming□
编程

2. time sharing□
分时

3. processing power□
处理能力

4. mainframe□
主机

5. ionosphere□
电离层

6. subnet□
子网

7. packet-switching□
分组交换

8. network architecture□
网络架构

9. distributed network□
分布式网络

10. node□
节点

a. a high-performance computer used for large-scale computing purposes that require greater availability and security than a smaller-scale machine can offer

b. a connection point, a redistribution point, or a communication endpoint (e. g. data terminal equipment)

c. a method of data distribution where information is broken into small segments of data known as packets and then reassembled when received at the destination

d. a process that leads from an original formulation of a computing problem to executable computer programs

e. the ability of a computer to manipulate data, often known as CPU power, CPU cycles, and various other names

f. a type of computer network that is spread over different networks

g. a technique which enables many people, located at various terminals, to use a particular computer system at the same time

h. an identifiably separate part of an organization's network, typically representing all the machines on the same local area network (LAN)

i. the layout of the network, consisting of the hardware, software, connectivity, communication protocols and mode of transmission, such as wired or wireless

j. the layer of the Earth's atmosphere that is ionized by solar and cosmic radiation. It lies 75～1000 km (46～621 miles) above the Earth

Task Ⅳ Group Work

1. Where do you see the Internet in twenty years from now? Exchange views with your

partners.

2. Look at the following pictures and try to explain their idea to each other.

1

2

3

4