

通信工程师职业资格认证统一考试丛书



通信英语

*ENGLISH ON
TELECOMMUNICATIONS*

张筱华 石方文 编著



信息产业部通信工程师认证指导委员会

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通信工程师职业资格认证统一考试丛书

通 信 英 语

编著 张筱华 石方文

信息产业部通信工程师认证指导委员会

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前 言

为了贯彻落实《中共中央关于建立社会主义市场经济体制若干问题的决定》中有关实行职业资格证书制度的精神,适应社会主义市场经济的需要,深化劳动、人事制度改革,客观公正地评价专业技术人才,促进人才合理流动。信息产业部决定在通信行业实行通信工程师职业资格制度,实现“以考代评”。《通信英语》是考试基本科目之一。为此,我们遵照信息产业部的要求,编写了这本教材,作为全国通信工程师专业英语统一考试的指定用书。

《通信英语》共分五个部分。

第一部分是《通信英语》考试大纲,说明考试的基本要求,是考生学习和复习《通信英语》的依据。

第二部分列举了《通信英语》教材中出现的较为主要的语法现象。认真学习这些语法要点,对于理解和掌握《通信英语》的课文将极有帮助。同时,语法也是考试内容的一部分,因而建议考生仔细阅读,真正熟悉这些语法现象。

第三部分是课文。《通信英语》共 15 个单元。内容涉及数字通信与数据通信,局域网与 Internet,光纤通信,移动通信,交换技术,ATM 技术,电信网与 ISDN 等方面,基本覆盖了当代通信的所有新技术领域。

《通信英语》的课文主要选自美国的一些高级别的通信技术刊物。这些课文语言朴实,文字流畅,易于阅读和理解。由于文章作者不同,写作风格各异,语法现象也各有侧重,因而对于应考者专业英语水平的提高,必定会有所帮助。

每个单元的后面都附有练习。各单元练习题的类型一致,都包括专业词组的汉译英、专业词组的英译汉、语法要点测试、对课文内容的理解测试和若干段的短文翻译练习等五类题目。为了明晰起见,每个单元的第三类题,即语法要点测试和第四类题,即对课文内容的理解测试的答

案都已在练习题中直接标出。

第四部分给出了第三部分各单元练习题中的第一类题、第二类题和第五类题的参考答案。由于英文词组和文章的翻译不是惟一的,作者所给的答案仅供考生参考。

最后,作者给出了两套模拟考题,作为本书的第五部分。由模拟考题可以看出,考题的风格与课后练习基本一致。

由于时间匆忙,难免会有个别错误,希望得到读者指正。

信息产业部通信工程师认证
指导委员会
2003.10

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第一部分

考试大纲

一、考试目的

《通信英语》是全国通信工程师职业资格统一考试的基本科目之一。

随着我国通信信息产业的迅猛发展,提高工程技术人员的专业英语水平已成为当务之急。设置《通信英语》考试,就是为了扩展考生在通信信息专业方面的英语词汇量,熟悉该领域的专业术语,了解科技英语的表达特点和掌握专业英语翻译技巧,从而大大提高他们的业务素质并增强他们在专业上与国际接轨的能力。

二、课程的基本内容

本课程选用教材为《通信英语》,由信息产业部组编,张筱华主编。

《通信英语》共 15 个单元。内容涉及数字通信与数据通信,局域网与 Internet,光纤通信,移动通信,交换技术,ATM 技术、电信网与 ISDN 等方面,基本覆盖了当代通信的所有新技术领域。

《通信英语》的课文主要选自美国的一些高级别的通信技术刊物。这些课文语言朴实,文字流畅,易于阅读和理解。由于文章作者不同,写作风格各异,语法现象也各有侧重,因而对于应考者专业英语水平的提高,必定会有所帮助。

三、考试的基本要求

1. 词汇要求

- (1) 对课文中出现的词汇能说出其汉语词义。
- (2) 对课文中常见的通信专业词组要求能够英汉互译,并要求拼写正确。

2. 语法要求

应熟练掌握下述常见的语法现象:

- 动词不定式
- 动名词
- 现在分词
- 过去分词
- 被动语态
- 常用介词
- 各类从句

3. 阅读要求

能读懂课文或与课文难易程度相当的课外(通信信息专业)英语材料,生词不超过所读材料词数的 2%,速度达每分钟 30 个词,理解基本正确。

4. 翻译要求

能将阅读的材料译成汉语,译文应文字通顺,意思基本正确,笔译速度达到每

小时 500 个英语单词。

5. 听、说和写作要求
暂不作考试要求。

四、学习方法

1. 要认真掌握一些常见的语法现象。

一些语法现象在专业英语文章中出现的频度很高,例如: The signal received from a satellite, located in far outer space, is very weak.

在这个很短的句子中,过去分词就出现过两次。因此,建议应考者在第一次遇到这类语法现象时,就应该将其作用和翻译方法真正掌握,这样才能将文章理解好,翻译好。

2. 要掌握一些常见的词头,词干和词尾。

词干是一个词的躯体,是不变化的部分,体现了该词的基本含义;词头是词干之前的部分,它能赋予该词干以新的词义,派生新词;词尾是词干之后的部分,它也能赋予该词干以新的词义,派生新词。所以,掌握了常用的词干、词头和词尾,就能大大地扩展自己的词汇量。

例如英语中的 -duc- 或 -duct- 都是词干,该词干的意义为“引导”,如果配以不同的词头和词尾,便衍生出许多英语单词,例如:

conduct *v.* 传导

conductor *n.* 导体

deduce *v.* 推演

deduct *v.* 扣除;演绎

induce *v.* 引起;引诱

inductance *n.* 电感

introduce *v.* 引入;介绍

produce *v.* 生产

reduce *v.* 减少

reproduce *v.* 再生产

再例如 trans-是一个词头,该词头的意义是“横过、跨过、贯通”,因而不难判断下述生词的意思:

transcontinental *a.* 横跨大陆的

transfer *v.* 转移;转换;传送

transmit *v.* 发送;传输

transmitter *n.* 发送器;发信机

transport *v.* 运输;运送

translate *v.* 转换;翻译

transplant *v.* 移植;移种

transform *v.* 转换;变换

3. 要精读课文。

教材中所选的许多课文都是较典型,地道的专业英语文章。这些文章文字用词严谨,语法现象规范,专业词组出现频度很高。因此,只要认真地精读几篇文章,即不仅将语法弄懂弄通,而且将词汇熟记在心,则英语水平就会大有长进。

4. 要认真听讲。

由张筱华教授讲授的《通信英语》已录制成光盘,供考生自学使用。

五、考试

考试方式为闭卷,笔试,考试时间为2小时。不允许查字典。

评分用百分制,60分为及格。

六、参考书目

《实用英语语法》(第三次修订本),张道真编,商务印书馆,1992。

《新英汉词典》,上海译文出版社,1988。

第二部分

主要语法现象

一、动名词

动名词的作用相当于名词,它在句子中可做主语、宾语或介词宾语。例如:

- (1) Reading is a good habit.

动名词在句子中作主语。

- (2) I enjoy working with you.

动名词在句子中作宾语。

- (3) I am interested in reading.

动名词在句子中作介词宾语。

动名词的作用虽然相当于名词,但它仍然具有一些动词的特征。例如,它可以有自己的宾语和状语。请看以下的例句:

- (4) I am interested in carefully reading books.

- (5) He insisted on doing it in his own way.

- (6) What would you suggest for overcoming the difficulties?

在《通信英语》中,动名词的应用相当普遍,再看下面的例子:

- (7) Digital transmission provides a powerful method for overcoming noisy environments.

- (8) Consequently there is an inherent advantage for overcoming noisy environments by choosing digital transmission.

- (9) The telephone contains a transmitter and receiver for converting back and forth between analog voice and analog electrical signals.

二、现在分词

1. 现在分词一般作形容词用,可修饰动作的发出者,有主动的意义。可译成“……的……”,此时多作定语。例如:

- (1) The smiling girl is Wangling.

- (2) This is an amusing story.

在更多情况下,我们可以用现在分词短语作定语,在意思上和一个定语从句差不多。例如:

- (3) The girl standing by the window talked to her friend.

- (4) There are a lot of boys on the sports ground playing football.

- (5) They built a highway leading into the mountains.

在《通信英语》中,现在分词的应用相当普遍,我们来看下面的例子:

- (6) Furthermore, we shall prove that a minimum theoretical sampling frequency of order 6.8 kilohertz is required to convey a voice channel

occupying the range 300 Hz to 3.4 kHz.

- (7) Thus the output to the codec may be seen as a sequence of 8 pulses relating to channel 1, then channel 2, and so on.
- (8) Fig. 3-1 illustrates a typical full-duplex data transmission system including the originating data processing equipment and the interface assembly which consists of buffer and control units.
- (9) In addition to defining standards covering the NNI, CCITT also embarked on a series of standards governing the operation of synchronous multiplexers and SDH Network Management.
- (10) The unquestionable success of the first generation of paging systems using wired networks with signaling devices was followed in the early 1950s by technological progress in the miniaturization of electronic circuitry.

2. 现在分词(分词短语)还可以作状语,用来表示方式、目的、条件、结果和背景等等;有时表示主语在作一个动作的同时还进行的另一动作,此时称之为伴随状态。例如:

- (1) Every evening they sit in sofa watching TV.

现在分词起伴随作用。

- (2) I read the English book, using my dictionary.

现在分词表示条件或背景。

还可以列出一些例子:

- (3) I ran out of the house shouting.
- (4) I got home, feeling very tired.
- (5) Not knowing her address, we couldn't get in touch with her.
- (6) She got to know them while attending a conference in Beijing.
- (7) By comparison, most other forms of transmission systems convey the message information using the shape, or level of the transmitted signal; parameters that are most easily affected by the noise and attenuation introduced by the transmission path.
- (8) At the receiving end of an asynchronous serial data link, the receiver continually monitors the line looking for a start bit.
- (9) Generally, this link has lower capacity than the total number of PBX subscribers, reflecting the fact that, at any given time, only a fraction of the subscribers will be engaged in external calls.
- (10) Today, certain models of pagers are even equipped with a display capa-

bility of providing optical messages consisting of 10 to 80 characters, and thus substantially increasing the efficiency of the system.

三、过去分词

1. 过去分词(短语)一般作形容词用,可修饰动作的对象,有被动的意义。可译成“被……的……”或“由……的……”,此时多作定语。例如:

- (1) The trees planted by me have grown up.
- (2) We've already met the target set in the program.
- (3) What's the language spoken in this area?
- (4) Suddenly there appeared a young woman dressed in green.
- (5) For example, the signal received from a satellite, located in far outer space, is very weak and is at a level only slightly above that of the noise.
- (6) Once the start bit has been detected, the receiver waits until the end of the start bit and then samples the next N bits at their centers, using a clock generated locally by the receiver.
- (7) Paging solutions to the above communication situations were introduced in the first half of this century by means of simple optical and acoustical signaling devices installed on the premises of enterprises, hospitals, offices, etc.
- (8) The ideal mobile telephone system would operate within a limited assigned frequency band and would serve an almost unlimited number of users in unlimited areas.
- (9) This is actually a collection of national networks interconnected to form an international service.
- (10) In addition to the five classes of switching centers listed above, the network is augmented with additional switching nodes called tandem switches.

2. 过去分词还可以作状语,例如:

- (1) Although originally designed and implemented to service analog telephone subscribers, it handles substantial data traffic via modem, and is gradually being converted to a digital network.
- (2) Compared with you, we still have a long way to go.

四、动词不定式

在《通信英语》中,动词不定式大量地用来作状语或作定语。

1. 动词不定式在句首或句末时常常用来表示目的,可译成“为了……”“以便……”,可见这时候起状语作用。例如:

- (1) To do a good job, we use good tools.
- (2) We use good tools to do a good job.
- (3) We must do everything we can to help them.

由于英语中常用被动语态,所以上面的例(2)可表示为:

- (4) Good tools are used to do a good job.

注意此例中的下划线部分,这类句型在《通信英语》中大量出现。例如:

- (5) A circuit of the demultiplexer is arranged to detect the synchronization word, and thereby it knows that the next group of 8-digits corresponds to channel 1.
- (6) Furthermore, we shall prove that a minimum theoretical sampling frequency of order 6.8 kilohertz is required to convey a voice channel occupying the range 300 Hz to 3.4 kHz.
- (7) As each incoming bit is sampled, it is used to construct a new character.
- (8) Timing signals from the interface assembly at the transmitter are applied to the data modem to synchronize the computer and the data set.
- (9) The switching centers are linked together by trunks. These trunks are designed to carry multiple voice-frequency circuits using either FDM or synchronous TDM.
- (10) The 10 regional centers are meshed together to provide full connectivity.

2. 动词不定式在名词之后常用来表示定语,译成“……的……”。例如:

- (1) She usually has a lot of meetings to attend in the evenings.
- (2) I want to get something to read during the vacation.
- (3) She was the first person to think of the idea.
- (4) This will be a good opportunity to exchange experience.
- (5) The operator of a local telephone switchboard had an option to transmit an optical or acoustical signal for the searched person over a wired network.
- (6) Why 800 MHz? The FCC's decision to choose 800 MHz was made because of severe spectrum limitations at lower frequency bands.
- (7) Any communication systems which can provide customers with means to communicate from any place, at any time and at any distance gives social and economic advantages.