Unit 1

Electricity

Highlights

Conversation Applying for Installing an Electricity Meter

Reading Electricity

Grammar Noun

Writing Telephone Message

Cultural Extension Current War Between DC (direct current) and AC (alternating current)

Section A Conversation

Applying for Installing an Electricity Meter

Character A: Miss Liu, a staff member of the power supply bureau

Character B: Mr. Li, a consumer

A: Can I help you, sir?

B: I'd like to apply for an electricity meter installation.

A: Where do you want to install it, your home or your company?

B: My home.

A: All right. Please fill out this application form.

B: Of course.

A: Please leave your cell phone number so that we can communicate with you if necessary.

B: All right.

A: Have you bought the electricity meter?

B: No. I don't know which kind of electricity meter to buy. Could you recommend one?

A: No problem. Do you have many electrical appliances at home?

B: Television, refrigerator and a personal computer are the major ones.

A: A two-ampere electricity meter is enough.

B: How many kinds of electricity meters do you have?

A: There's a common one and the other one is an IC electricity meter. It means you must prepay then you can consume.

B: Where can I buy the meter and when can you install it for me?

A: You can get it in big shops or places appointed by the power department and we'll install it as soon as possible.

B: Thank you.

A: You're welcome.

New Words and Expressions

apply [ə'plaɪ]	*v.*	申请
install [in'stɔ:l]	*v.*	安装；安置
staff [stɑ:f]	*n.*	全体职员
power ['pəʊə]	*n.*	电力；功率
bureau ['bjʊərəʊ]	*n.*	办事处
company ['kʌmpənɪ]	*n.*	公司
application [ˌæplɪ'keɪʃn]	*n.*	申请
cell phone [sel fəʊn]	*n.*	手机
communicate [kə'mju:nɪkeɪt]	*v.*	沟通；联系；交流
recommend [ˌrekə'mend]	*v.*	推荐；建议
major ['meɪdʒə]	*adj.*	主要的；重要的
consume [kən'sju:m]	*v.*	消耗；消费
appoint [ə'pɔɪnt]	*v.*	任命；委派
department [dɪ'pɑ:tmənt]	*n.*	部门；系
apply for	申请	
fill out	填写（表格等）	
as soon as possible	尽早；尽快	

Technical Words and Expressions

power supply bureau	供电局
installation [ˌɪnstə'leɪʃn]	安装
electricity meter	电表
electrical appliance	电器
ampere ['æmpeə]	安培
IC electricity meter	IC卡式电表
power department	电力部门

Section B Reading

Electricity

What do you know about the history of electricity? Was it that Benjamin Franklin flew his kite during a **thunderstorm** or when light bulbs were installed in homes all around the world?

So, what is electricity? Like natural **resources**, it naturally exists in the world. **For example**, **lightning** is simply a **flow** of **electrons** between the ground and the clouds in the form of **static** electricity.

In late 1881, the world's first public electricity supply was provided. Electric lights were lit in the streets of the Surrey town in the UK. This **system** was **powered** from a water wheel on **the River Wey**.

In early 1882, Edison opened the world's first steam-powered electricity **generating** station at **Holborn Viaduct** in London, and he had **entered into an agreement** to provide street lighting for three months. In time he had supplied a number of local **consumers** with electric lights.

Nikola Tesla, who had worked for Edison for a short time and understood the electrical **theory** in a way that Edison did not, **devised** an **alternative** system using alternating current. This allowed efficient high **voltages** for **distribution** where their risks could easily be **mitigated** by good design while still **allowing** fairly safe voltages to be supplied to the **loads**.

New Words and Expressions

thunderstorm ['θʌndəstɔːm]	*n.*	雷雨
resource [rɪ'sɔːs]	*n.*	资源
lightning ['laɪtnɪŋ]	*n.*	闪电
flow [fləʊ]	*n.*	流动；流畅
electron [ɪ'lektrɒn]	*n.*	电子
static ['stætɪk]	*adj.*	静止的
system ['sɪstəm]	*n.*	系统
power ['paʊə(r)]	*v.*	用动力运行
generate ['dʒenəreɪt]	*v.*	使形成；产生
agreement [ə'griːmənt]	*n.*	协议
consumer [kən'sjuːmə(r)]	*n.*	消费者；顾客
theory ['θɪərɪ]	*n.*	学说；理论

devise [dɪ'vaɪz]	*v.*	设计；发明
alternative [ɔ:l'tɜ:nətɪv]	*adj.*	替代的；交替的
voltage ['vəʊltɪdʒ]	*n.*	电压
distribution [dɪstrɪ'bju:ʃn]	*n.*	分配；分布
mitigate ['mɪtɪgeɪt]	*v.*	使缓和；使减轻
allow [ə'lau]	*v.*	允许
load [ləʊd]	*n.*	负荷；负担
for example	例如	
the River Wey	威伊河	
Holborn Viaduct	霍伯恩高架桥	
enter into an agreement	达成协议	

Exercise

I. Fill in the blanks according to the passage.

In early 1882, Edison opened the world's first _____ electricity generating station at Holborn Viaduct in London, and he had _____ into an agreement to provide street lighting for three months. In time he had _____ a number of local _____with electric lights.

II. Fill in the blanks in the following sentences with the words given, changing the form of the words where necessary.

naturally	install	supply	power
flow	simply	realize	consume

1. Her cheeks are _____ red.
2. Our task is to _____ vegetables all the year round.
3. Each year Americans _____ a high percentage of the world's energy.
4. A man should rely upon his own _____.
5. My wishes have been _____.
6. They dressed neatly and _____.
7. The workers are _____ a heating system.
8. The stream _____ past the house.

III. Translate the expressions into Chinese or English.

1. history of electricity _____
2. 在世界上自然存在 _____
3. public electricity supply _____
4. steam-powered electricity generating station _____
5. 供路灯照明 _____

IV. Translate the following sentences into Chinese.

1. So, what is electricity? Like natural resources, it naturally exists in the world.

_____

2. Lightning is simply a flow of electrons between the ground and the clouds in the form of **static** electricity.

_____

3. In late 1881, the world's first public electricity supply was provided.

_____

4. In time he had supplied a number of local consumers with electric lights.

_____

Section C Grammar

Noun（名词）

一、名词的分类

名词分为专有名词和普通名词两大类。

表示具体的人、事物、地点、团体、机构、星期等的词叫作专有名词。

专有名词一般为不可数名词，且首字母必须大写。其中，含有普通名词的专有名词、姓氏复数和表示江河、湖海、山脉、群岛等的专有名词需在名词前加定冠词 the。

表示某类人或事物的词叫作普通名词。

1. 表示单个人或物的名词——个体名词

个体名词前面可以加不定冠词和数词，后面可以加复数形式。

• I am a student.

我是学生。

• There are 60 students in the class.

班里有 60 名学生。

• I love apples.

我喜欢苹果。

2. 表示一群人或事物的名词——集体名词

（1）family（家庭）、team（团队）、class（班级）等集体名词在句中作主语时，把其看作一个整体，谓语动词用单数形式；强调集体中的成员时，谓语动词用复数形式。

• Her family has moved to Beijing.

她家搬到北京了。

• Her family are watching TV together.

她的家人正在一起看电视。

（2）集体名词 police（警察），常加定冠词 the，当其作主语时，谓语动词用复数形式。

• The police search the area to look for the lost child.

警方搜遍这个地区寻找走失的孩子。

3. 表示无法分为个体实物的名词——物质名词

• The fresh air in the morning made me feel glad.

早晨的新鲜空气使我觉得愉快。

• The rain water drops from the roof.

雨水从屋顶滴下来。

4. 表示动作、品质、状态或其他抽象概念的名词——抽象名词

• Smoking is harmful to your health.

吸烟对你的健康有害。

• I prefer country life to city life.

我喜爱乡村生活胜过城市生活。

二、可数名词和不可数名词

不能以数目来计算，不可以分成个体的概念、状态、品质、感情或表示物质材料的名词称为不可数名词。

1. 常见的不可数名词

water 水	air 空气	food 食物
information 信息	advice 建议	knowledge 知识

2. 不可数名词的转化

（1）可转化为可数名词的物质名词（有些物质名词在表达具体的可数的概念时，可以转化为可数名词，前面可以加不定冠词）。

• coffee 咖啡→ a coffee 一杯咖啡

• beer 啤酒→ a beer 一杯啤酒

（2）可转化为可数名词的抽象名词（抽象名词表示具体的事物时，可以转化为可数名词，表示“某种人或物”）。

• success 成功→ a success 成功的人或事物

• failure 失败→ a failure 失败的人或事物

• honor 荣耀→ an honor 令人感到荣耀的人或事物

• pity 遗憾→ a pity 令人感到遗憾的人或事物

可以用数目来计算，可以分成个体的名词称为可数名词。

3. 可数名词的规则变化

形　式	说　明	举　例
规则变化	一般情况下，在名词词尾直接加 -s	coat → coats 外套
	以 -s、-x、-ch、-sh 结尾的名词，加 -es	bus → buses 公共汽车
	以 o 结尾的名词，一般在词尾加 -s 通常以 o 结尾的名词有生命的加 -es	piano → pianos 钢琴 tomato → tomatoes 西红柿
	以 f 或 fe 结尾的名词，一般要先变 f 或 fe 为 v 再加 -es	leaf → leaves 叶子
	以辅音字母 +y 结尾的名词，先变 y 为 i 再加 -es 以元音字母 +y 结尾的名词，直接在词尾加 -s	family → families 家庭 boy → boys 男孩

4. 可数名词的不规则变化

deer → deer	sheep → sheep	fish → fish 鱼（鱼的条数）
man → men	woman → women	child → children
foot → feet	tooth → teeth	goose → geese
mouse → mice 老鼠	ox → oxen	grown-up → grown-ups

三、名词所有格

名词所有格表示所属关系，共四种：’s 所有格、of 所有格、双重所有格、特殊所有格。

1. ’s 所有格

（1）通常情况下，名词词尾直接加 ’s。

• my daughter’s homework 我女儿的作业

• Marx’s works 马克思的作品

（2）以 s 结尾的复数名词，词尾直接加 ’。

• teachers’ office 教师办公室

• students’ books 学生们的书

（3）不以 s 结尾的复数名词，词尾直接加 ’s。

• the Children’s Palace 少年宫

• the People’s Square 人民广场

2. of 所有格

（1）表示无生命的名词常用“of+ 名词”结构构成。

• a map of the world 一张世界地图

• the capital of Jilin province 吉林省的省会

（2）既可以用 ’s 所有格，也可以用 of 所有格的情况。

• China's economy → the economy of China 中国经济

• today's homework → the homework of today 今日作业

3. 双重所有格

由“of + 's 所有格”或“of + 名词性物主代词”构成的所有格称为双重所有格。

• a friend of Mike's 麦克的一个朋友

• a play of Shakespeare's 莎士比亚的一部戏剧

• a friend of hers 她的一个朋友

4. 特殊所有格

若一样东西为两人或多人共有时，只在最后一个名词后用 's 所有格；若为各自所有，则各个名词的后面都用 's 所有格，且其后名词应为复数。

• The woman dressed in red is Ann and Alice's mother.

那个穿红色衣服的女人是安和爱丽丝的母亲。

• You should find what the difference is between Nick's and Sam's rooms.

你应该发现尼克的房间和山姆的房间有何不同。

Grammar Practice

A. Compare the different meanings of the noun and the plural forms.

1. work _____ works _____
2. glass _____ glasses _____
3. compass _____ compasses _____
4. wood _____ woods _____
5. cloth _____ clothes _____

B. Choose the best item to complete each sentence.

1. Will you please make _____ for the woman with a baby?

   A. rooms B. the rooms C. room D. some room

2. Please give me two _____ milk.

   A. glass B. glass of C. glasses D. glasses of

3. I've read _____ sports news about the F1 race today.

   A. two B. pieces C. two pieces D. two pieces of

4. A: Shall we go out for a walk?

   B: Sorry. This is not the right _____ to invite me. I am too tired to walk.

   A. plan B. chance C. moment D. situation

5. It is no _____ arguing with Bob because he will never change his mind.

   A. time B. use C. need D. way

6. _____ is standing at the corner of the street.

   A. A police B. The police C. Police D. A policeman

7. An ant has two _____.

A. stomaches B. stomachs C. stomakes D. stomacks

8. Can you imagine what life will be like in _____ time?

A. 5 years' B. 5 year's C. 5-years' D. 5-year's

9. Bill said he was going to help _____ with _____ English.

A. a friend of Lucy's; hers B. a friend of Lucy's; her

C. a friend of Lucy; hers D. a friend of Lucy; her

10. There _____ some _____ in the field.

A. is; deer B. are; deers C. are; deer D. is; deers

11. What's your _____ for being late again?

A. idea B. key C. excuse D. news

12. —You are always full of _____. Can you tell me the secret?

—Taking plenty of exercise every day.

A. power B. strength C. force D. energy

13. Of the seven days in a week, Saturday is said to be the most popular _____ for a wedding in some countries.

A. way B. situation C. event D. choice

14. He and his wife are of the same_____; they both want their son to go to college.

A. soul B. spirit C. heart D. mind

15. We've missed the last bus. I am afraid we have no _____ but to take a taxi.

A. way B. choice C. selection D. method

16. —If you like I can do some shopping for you.

—That's a very kind _____.

A. offer B. service C. point D. suggestion

17. _____ engineers and workers are helping to rebuild the damaged bridge.

A. Much B. A lot C. A little D. Many

18. School children must be taught how to deal with dangerous _____.

A. states B. conditions C. situations D. positions

19. She went to the bookstore and bought _____.

A. dozen books B. dozens books

C. dozen of books D. dozens of books

20. _____ car broke down on the way, but luckily they knew how to fix it.

A. Tom's and Jane's B. Tom's and Jane'

C. Tom and Jane's D. Tom and Jane

Section D Writing

Telephone Message

一般情况下，公司都备有电话记录本，以便在来电寻找的人不在时记录电话留言。电话留言应包括来电日期、时间、来电者的姓名、来电内容、来电者的电话号码、电话留言记录者的名字等。电话留言可以用公司或机构专用的电话留言，或者采用便条形式。电话留言的语言应简练，常用简略结构，如省略主语、冠词及使用缩略语等。

Sample 1

Telephone Message

To: Mr. Green (Sales Dept.)
in your absence
Mr. Fox of Talent Company
Telephone No.: 0427-6478
Left the following message:
He is the sales manager of Talent Company. Please call him today before 4:30 p.m. or any time tomorrow. He would like to negotiate the discount with you.
Signed: Mary Green
Date: Wednesday, May 8th **Time:** 2:00 p.m.

Sample 2

Telephone Message

Message for: Manager Zhang
Date: Feb.12th, 2011
From: Chen Xing
Message: Mr. Chen invites you to attend a lunch meeting in B&R Hotel at 12:00 at noon today and asks you to call him back.
Phone number: 130 0444 4712
Message taken by: Linda

Writing Practice

I. Write a telephone message in note form by using the information provided below.

You work for A&B Travel. Mr. Joseph, your manager, was out of the office this morning. You

received a telephone call for him. The caller's name is Mrs. White. She asked the manager to call her back this afternoon. Her number is 012-4578994. Use today's date.（July 20th, 2020）

Telephone Message

Message for: _____

Date: _____

From: _____

Message: _____

Phone number: _____

Message taken by: _____

II. **Write a telephone message in note form by using the information provided below.**

按照电话留言的格式，以秘书 Judy 的名义给 Mr. White 写一份电话留言：

1. 来电人：ABC 公司的 Mr. Green
2. 来电时间：2018 年 7 月 15 日下午 2 点
3. 事由：Mr. Green 明天去上海出差，因此原定与 Mr. White 后天的约会取消，等出差回来后再约时间见面。

Telephone Message

From: _____ To: _____

Date: _____ Time: _____

Message: _____

_____

Signature: _____

Section E Cultural Extension

Current War Between DC (direct current) and AC (alternating current)

Thanks to AC, it is AC technology that makes the world work today. However, the success of alternating current is based on a heated debate between the two greatest inventors at the end of the 19th century. They are Edison and Tesla.

In the second half of the 19th century, almost everyone thought it was impossible to use alternating current in practice, because DC always flows in the same direction while AC repeatedly

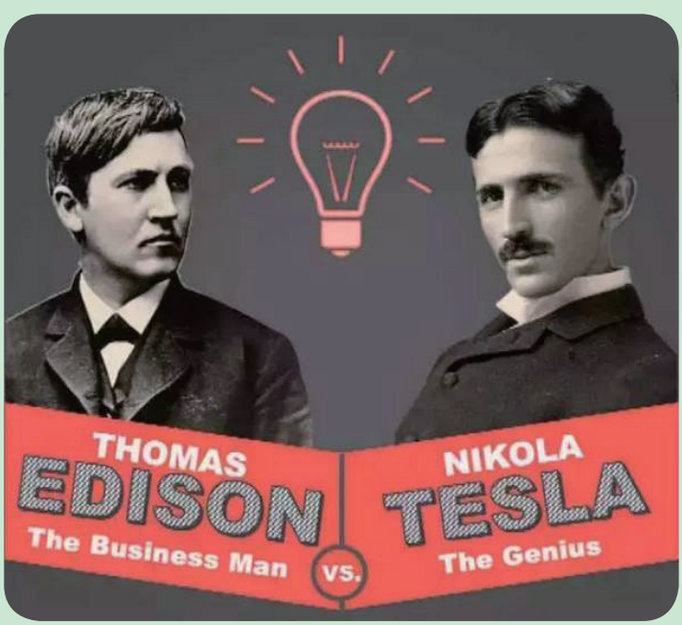
changes the size and direction. The earliest electric motors used DC.

The turn of events took place in 1882. After rigorous mathematical analysis, Tesla worked out a new experimental scheme. He used two heterogeneous AC phase changers to ensure that there was sufficient and powerful current to make the engine run. In 1883, Tesla made the first small AC motor.

In 1879, Edison invented incandescent lamp. The rapid popularity of this kind of lamp in real life made Edison himself a successful entrepreneur and world-famous inventor. But he also faced a lot of problems at that time: if the lighting in a residential area was more than a kilometer away from the power station, it would not be able to get enough current to emit strong light, because DC could not transmit energy over a long distance. In order to make the lighting system work properly, a power station has to be built every one kilometer, otherwise the efficiency of the generator will be increased or several generators will be connected together in order to generate more current.

The task assigned by Edison to Tesla is to improve the performance of these DC systems. But Tesla has always believed that Edison can be persuaded to accept AC, which is clearly dominant in many ways.

Alternating current (AC) can eventually be popularized because it is multifaceted and more economical than its competitors. Today, the society we live in needs a lot of electricity every day, which is transmitted through wires to some places far away from power stations and even somewhere hundreds of kilometers away. In this way, part of the energy is inevitably lost and converted into heat energy in the process of transmission. The greater the current is and the farther the distance is, the greater the waste is.



In order to reduce the loss of this energy, it is necessary to use the thick wires. If so, the raw materials will be greatly wasted and the cost will be increased accordingly. The solution to this problem is to increase the voltage.

Transformers can increase the voltage generated by power stations to tens of thousands of volts. Other transformers used in place can reduce voltage as needed. It is precisely because of the need for transformers that we must use alternating current. In fact, the principle of these transformers is to make use of alternating magnetic field, which is generated by AC rather than DC protected by Edison.