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Contents

Unit 1	What's Your Future Job Like?	1
Reading One	Rosy Prospects for China's Equipment Manufacturing Industry	2
Reading Two	What Do Machinists Do?	7
Unit 2	Which Company Will You Join in?	14
Reading One	Problems Associated with Increasing Automobile in China	16
Reading Two	General Motors: Make a Positive Difference	21
Unit 3	Do You Know These Directions?	27
Reading One	Health and Safety in Workshop	29
Reading Two	Trouble-shooting	38
Unit 4	What Is CAD for?	44
Reading One	Computer-Aided Design	46
Reading Two	Electronic Design Automation	50
Unit 5	What Is CAM for?	55
Reading One	Computer-Aided Manufacturing (CAM)	56
Reading Two	Numerical Control	60
Unit 6	How Much Do You Know ISO?	65
Reading One	What Are ISO and ISO/TS 16949?	66
Reading Two	Product Inspection and Testing	71

Unit 7	Have You Ever Heard of GM?	80
Reading One	Green Marketing Ideas	81
Reading Two	A Classic Advertisement for Rolls-Royce	86
Unit 8	How Do You Transport Your Goods?	97
Reading One	Logistics Management	99
Reading Two	How Do We Transport Our Goods?	103
Unit 9	How Can You Win Users' Smile?	109
Reading One	Security Features of iPad	111
Reading Two	Product Recall	114
Unit 10	Are You Going to CIMT?	120
Reading One	Job Advertisement and Cover Letters	122
Reading Two	A Professional Résumé	128
Key to Tasks		134
Scripts of Listening		157
Chinese Translation of Reading Passages		169
Glossary		191
References		206

Unit 1

What's Your Future Job Like? —Career Preview

Part I Focus on the Topic

Task 1 Talking about the Workshop Tour

Mr. Baker and John have just had a workshop tour. Listen to the conversation and fill in the blanks with what you have heard.

Mr. Baker: It was very kind of you to give me a tour of the place. It gave me a good idea of your product range.

John: It's a pleasure to show our factory to our customers. What's your general 1. _____, may I ask?

Mr. Baker: Very impressive, indeed, especially the speed of your new model.

John: That's our latest development. A product with high 2. _____. We put it on the market just two months ago.

Mr. Baker: The machine gives you an edge over your 3. _____, I guess.

John: Certainly. No one can 4. _____ us as far as speed is concerned.

Mr. Baker: Could you give me some brochures for that machine? And the price if possible.

John: All right. Here is our sales 5. _____ and price list.

Mr. Baker: Thank you. I think we may be able to work together in the future.

Task 2 What Is Mechatronics?

The following passage is about mechatronics. Listen to the passage and fill in the blanks with what you have heard.

Mechatronics is a term originated by the 1. _____ to describe the

integration of mechanical and electronics engineering. More specifically, it refers to the 2. _____ of machines by introducing computers and other electronic equipment to develop a system, which provides new functions and capabilities with more accuracy and lower cost.

A best and well-known example of mechatronics is the industrial robot. In a robot, the body and other physical parts are manufactured based on mechanical 3. _____, but the functioning and control of the robot is done by electronic means.

Before the 1970s, most of the industrial products and equipment such as machine tools, manufacturing equipment, and home 4. _____ were mainly based on mechanical principles, with very few electrical and electronic features. But after the seventies, there was a change in the technology of these products, and the change was an increasing content of electrical and electronic system, which was 5. _____ with the mechanical parts of the products.

Part II Vocabulary Study

Write out the words according to their meanings in the right column. The first letters are already given.

1. a _____ a device or control that is very useful for a particular job
2. c _____ do or give something to somebody in return; make amends for
3. c _____ in regular succession without gaps
4. d _____ the remains of something that has been destroyed or broken up
5. e _____ someone who organizes a business venture and assumes the risk for it
6. l _____ make something slippery or smooth through the application of a lubricant
7. m _____ an impelling force or strength
8. s _____ connected with something but less important than it

Part III Reading One

Rosy Prospects for China's Equipment Manufacturing Industry

The first quarter of 2011 witnessed four **consecutive** falls of the **Prosperity**

Index for China Equipment Manufacturing Industry, showing the trend is returning to stable development. The future of the industry is widely considered to be promising. The growth of agricultural machinery, engineering & construction machinery, and power-generation and power **grid** equipments is very eye-catching.

China's Equipment Manufacturing Industry Climate Index Report shows that, in the first quarter of 2011, overall growth of the equipment manufacturing industry slowed down due to the decreased growth rate of the production and sales **volume** of the automobile industry. However, manufacturing industries other than the auto industry have enjoyed strong growth, providing **substantial momentum** for the growth of the industry.

On the whole, the industry maintained stable growth in the first quarter. The output value of machinery products grew by 29 percent, and that of the electronic information products manufacturing industry grew by 22 percent. The engineering machinery industry has been expanding swiftly, **scoring** a dramatic growth of 58 percent, with significant increase in the production of products such as road rollers, **excavators**, **concrete** machines, and **forklift** trucks. The production value of each of machine tool industry, machine components industry, agricultural machine industry, **petrochemical** equipment industry, and electrical engineering products and **appliances** industry has grown by over 30 percent. Many products enjoyed significant year-on-year growth, including agricultural harvest machines, construction and engineering machines and **hydraulic** parts, oil well drilling equipments, and **steam turbo-generators**, among others. Basic components of electronic information products become an important growth engine of the industry. The growth of computer and home audio and video industries has slowed down.

Demands in the equipment products market are still **thriving**. In the first quarter, sale **revenue** increased by 23.8 percent year on year. **Subsidiary** industries of the equipment manufacturing industry have all enjoyed over 20 percent increase of sales revenue year on year. The specialized equipment market and multi-purpose equipment market grow **comparatively** faster. The month-on-month growth of the auto industry slowed down, with 4,987,300 vehicles sold in the first quarter, a year-on-year increase of 8.1 percent. Demands for high-end equipment products, such as energy-saving & environment-friendly equipments, new-energy equipments, ocean engineering equipments, and numerical control machine tools, will enter a stage of

rapid growth. The growth rate of the production of wind driven generators is as high as 61.7 percent, that of numerical control metal-cutting machine tools 37.2 percent, and anti-pollution equipments 25.9 percent.

Resources investment, including capital and labor, into the equipment manufacturing industry has been increasing continuously. At the end of the first quarter, the total investment value of **fixed assets** increased by 38.4 percent year on year, with communication equipments, computer manufacturing, electrical engineering and appliance, machine tools, and auto industry enjoying faster growth of fixed assets investment. More jobs are created in the industry. At the end of the quarter, the industry employed 31.18 million workers, an increase of 12.7 percent year on year. Being able to attract investment and create jobs is a sign that the industry is in good condition. It also indicates that companies are viewing the prospects of the industry favorably, and that **entrepreneurs** are confident. (524 Words)

► Read for main ideas

Choose the correct answers to complete the following sentences.

1. In the first quarter of 2011, overall growth of the equipment manufacturing industry slowed down due to _____ and _____.
A. the decreased investment in the industry
B. the decreased growth rate of automobile production
C. the decreased automobile sales
D. the decreased price of manufacturing equipment
2. We may know that the industry is in a good condition based on the fact that it can _____ and _____.
A. attract investment
B. bring more and more products
C. create job
D. produce high profits

► Read for details

Complete the following sentences with the correct information from the reading.

1. Manufacturing industries other than the auto industry have enjoyed strong growth, providing _____ for the growth of the industry.

2. The _____ of machinery products grew by 29 percent, and that of the electronic information products manufacturing industry grew by 22 percent.
3. Basic components of electronic information products become _____ of the industry.
4. Resources investment into the equipment manufacturing industry, including _____, has been increasing continuously.
5. Demands in the _____ are still thriving, for example, in the first quarter, sale revenue increased by 23.8 percent year on year.
6. The _____ has been expanding swiftly, scoring a dramatic growth of 58 percent.

► Make inferences

Work with a partner. Read each sentence. Write T(True) or F(False). Then share your answers with your class.

- _____ 1. The future of equipment manufacturing industry in China is widely considered to be promising.
- _____ 2. The automobile industry has been expanding swiftly, scoring a dramatic growth of 58 percent.
- _____ 3. Demands in the equipment products market are still thriving. In the first quarter, sale revenue increased by 25.8 percent year on year.
- _____ 4. Resources investment, including capital and labor, into the equipment manufacturing industry has been increasing continuously.

► Express opinions

Do you agree China's equipment manufacturing industry has a rosy prospect? Check (✓) your answer. Then choose a reason or add your ideas. Share your answer with a partner.

— Yes, I agree.

- * Equipment manufacturing industry plays a key role in China's economical development.
- * Equipment manufacturing industry brings more employment.
- * Equipment manufacturing industry attracts huge investment.
- * _____

— No, I don't agree.

- * The production and sales of the automobile industry is slowing down.
- * The equipment manufacturing industry in China is lack of innovation.
- * China's economic development rate will decrease in recent years.
- * _____

Part IV Task-driven Practice

What's Your Future Job Like?

This task aims to introduce yourself, talk about your major and describe your future job. Work in groups. Give a PPT presentation in the class, which includes introducing yourself and talking about your major and your future work. Please follow the Task Description to complete the project.

► Task Description

The whole task is divided into three steps.

Step one is about briefly introducing yourself, your unique strength and problems.

Step two centers on talking about your major and related work skills and capabilities.

Step three is to describe your future job you're expecting and how to get it.

► Language Tips

【引导文1】 Personal Introduction (英语自我介绍举例)

Good morning, my name is Ye Wen. It is really a great honor to have this opportunity to introduce myself here. I am 20 years old, born in Wenzhou, Zhejiang Province, and I am currently a freshman at Quzhou College of Technology. My major is the Technology of Mechanical and Electrical Integration (or CNC, Mechanical Manufacturing and Automation, etc.). I have acquired basic knowledge of mechanical manufacturing both in theory and in practice. I realized the importance of English and began to study diligently when I was six. It is my greatest wish to pass CET 4 and CET 6 in the future.

【引导文2】 English for Presentation (英语展示引导句)

1. Getting people's attention
 - (1) Could I have your attention, please?

- (2) Good morning/afternoon, everyone!
 - (3) Ladies and gentlemen, attention please!
 - (4) Thank you all for coming here.
 - (5) On behalf of our company, I'd like to welcome you here to ...
2. Starting a presentation
 - (1) I'd like to present some information about ...
 - (2) Thank you for giving me the opportunity to tell you about ...
 - (3) It's my pleasure/honor to present you ...
 - (4) The subject of today's presentation is ...
 - (5) I'm here today to tell you about ...
 3. Finishing a presentation
 - (1) Thank you for listening.
 - (2) Don't hesitate to ask any questions.
 - (3) That's all I have to say about ...
 - (4) There's a lot more I can say about ... but time is limited.
 - (5) If you have any questions, I'd be delighted to answer.

【引导文3】 Related Courses (相关专业课程名称)

1. Engineering Mechanics (工程力学)
2. Computer Application (计算机应用)
3. Mechanical Drafting (机械制图)
4. Mechanical Manufacturing Basics (机械制造基础)
5. Hydraulic and Pneumatic Drive Technology (液压与气动技术)
6. Electrical Control and PLC (电气控制与PLC)
7. NC Programming (数控编程)
8. CAD/CAM Application (CAD/CAM应用)

Part V Reading Two

What Do Machinists Do?

Machinists use machine tools, such as **lathes**, **milling machines**, and machining centers, to produce **precision** metal parts. Although they may produce large quantities of one part, precision machinists often produce small batches or one-

of-a-kind item. They use their knowledge of the working properties of metals and their skill with machine tools to plan and carry out the operations needed to make machined products that meet precise **specifications**.

Before they machine a part, machinists must carefully plan and prepare the operation. These workers first review blueprints or written specifications for a job. Next, they **calculate** where to cut the workpiece, how fast to feed the metal into the machine, and how much metal to remove. They then select tools and materials for the job. Plan the **sequence** of cutting and finishing operations, and mark the metal **stock** to show where cuts should be made.

After this layout work is completed, machinists perform the necessary machining operations. They position the metal stock on the machine tool—drill press, lathe, milling machine, or other type of machine—set the controls, and make the cuts. During the machining process, they must constantly monitor the **feed rate** and speed of the machine. Machinists also ensure that the workpiece is being properly lubricated and cooled, because the machining of metal products generates a significant amount of heat. The temperature of the workpiece is a key concern because most metals expand when heated; machinists must adjust the size of their cuts relative to the temperature. Some rare but increasingly popular metals, such as **titanium**, are machined at extremely high temperatures.

Machinists detect some problems by listening for specific sounds—for example, a dull cutting tool or **excessive vibration**. Dull cutting tools are removed and replaced. Cutting speeds are **adjusted** to **compensate** for **harmonic vibrations**, which can decrease the accuracy of cuts, particularly on newer high-speed spindles and lathes. After the work is completed, machinists use both simple and highly **sophisticated** measuring tools to check the accuracy of their work against **blueprints**.

Work Safety

Today, most machine shops are relatively clean, well lit, and **ventilated**. Many computer-controlled machines are partially or totally enclosed, minimizing the **exposure** of workers to noise, **debris**, and the lubricants used to cool workpieces during machining. Nevertheless, working around machine tools presents certain dangers, and workers must follow safety **precautions**. Machinists wear protective equipment, such as safety glasses to **shield** against bits of flying metal and **earplugs**

to dampen machinery noise. They also must exercise caution when handling hazardous coolants and lubricants, although many common water-based lubricants present little hazard.

Job Opportunities

Job opportunities for machinists should continue to be good, as employers value the wide-ranging skills of these workers. Also, many young people prefer to attend college or may not wish to enter production occupations. Therefore, the number of workers learning to be machinists is expected to be less than the number of job openings arising each year from the need to replace experienced machinists who retire or transfer to other occupations.

So don't hesitate any longer, and let's get into the machine shop right now. (516 Words)

Part VI Practical Writing

Establishing business relations is the first step to develop trade ties. Since business growth and expansion largely depend on the establishment of business relations, writing appropriate business letters in this respect is vitally important.

When writing a letter to start business with another company, you are supposed to tell your readers how you get this address and what your business line is, then state your purpose and request, and finally express your sincere wish to cooperate in future.

If you reply a letter of this kind, you should try to answer all the questions with necessary information the other party required. Please remember to reply politely even if you are unable to meet their needs. The reasons should be made clear so as to leave space for future cooperation.

Task 1 Read the sample letter and answer the following questions.

Dear Mr. Zhang Qing,

We have obtained your name and address from Blue Sky Ltd. and we are

writing in the hope that you would be willing to establish business relations with us.

We have been leading importers of rolling bearings for many years. At present, we are interested in extending our range and appreciate your catalogues and quotations.

If your prices are competitive, we would like to place a trial order with you.

We look forward to your early reply.

Yours faithfully

Michael Jones

Purchasing Manager of Leigh Mardon

1. Why does Michael Jones write this letter?

2. How does Michael Jones get to know Mr. Zhang's company?

3. Why does Leigh Mardon Company want to establish business relations with Mr. Zhang's company?

4. What business is Leigh Mardon Company engaged in?

Task 2 Follow-up Writing

Zhang Qing has written a letter in reply to Michael Jones. Please finish the letter according to the sample letter given above.

Dear Mr. Michael Jones,

We acknowledge with thanks for 1. _____ (收到你方来信) of May 6, 2012 and take the pleasure of 2. _____ (与你方建立贸易关系).

Our company was founded in 1995 and we are 3. _____
_____ (处于领先地位) in manufacturing rolling bearings. We can assure
you that our products are 4. _____ (物美价廉).

Enclosed please find our catalogues and quotations. If you are interested
in any item, please 5. _____ (随时联系我们).

We look forward to your favorable reply.

Yours faithfully,
Zhang Qing
Marketing Assistant from
Kaiyue Company in China

Achievement Test

Task 1 Read Reading One again and translate the following expressions.

1. engineering & construction machinery _____
2. automobile industry _____
3. electrical engineering products _____
4. stable development _____
5. multi-purpose equipment _____
6. 农业和食品机械 _____
7. 建筑行业 _____
8. 数码产品 _____
9. 快速发展 _____
10. 新能源设备 _____

Task 2 Translate the following paragraph into Chinese.

The first quarter of 2011 witnessed four consecutive falls of the Prosperity Index for China Equipment Manufacturing Industry, showing the trend is returning to stable development. The future of the industry is widely considered to be promising. The growth of agricultural machinery, engineering & construction machinery, and power-generation and power grid equipments is very

eye-catching.

Task 3 *Read the following passage and answer the questions.*

Mass Production

Mass production involves making many copies of products, very quickly, using assembly line techniques to send partially complete products to workers who each work on an individual step, rather than having a worker work on a whole product from start to finish.

Mass production is capital-intensive and energy-intensive, as it uses a high proportion of machinery and energy in relation to workers. It is also usually automated while total expenditure per unit of product is decreased. However, the machinery that is needed to set up a mass production line (such as robots and machine presses) is so expensive that there must be some assurance that the product is to be successful to attain profits.

One of the descriptions of mass production is that “the skill is built into the tool”, which means that the worker using the tool may not need the skill. For example, in the 19th or early 20th century, this could be expressed as “the craftsmanship is in the workbench itself” (not the training of the worker). Rather than having a skilled worker measure every dimension of each part of the product against the plans or the other parts as it is being formed, there were jigs ready at hand to ensure that the part was made to fit this set-up. Later, once computerized control came about (for example, CNC), jigs were obviated, but it remained true that the skill (or knowledge) was built into the tool (or process, or documentation) rather than residing in the worker’s head. This is the specialized capital required for mass production; each workbench and set of tools (or each CNC cell, or each fractionating column) is different (fine-tuned to its task).

Questions:

1. What is mass production?
-

2. Why could total expenditure per unit of product be decreased in mass production?

3. How do you understand “the skill is built into the tool” in mass production?
