

2006年英语(二)课文辅导：课文详解 PDF转换可能丢失图片或格式，建议阅读原文

https://www.100test.com/kao_ti2020/151/2021_2022_2006_E5_B9_B4_E8_8B_B1_c67_151986.htm 三.课文详解 Improving Industrial Efficiency through Robotics (链接，出现机器人的画面) Robots, becoming increasingly prevalent in factories and industrial plants throughout the developed world, are programmed and engineered to perform industrial tasks without human intervention. Most of today's robots are employed in the automotive industry, where they are programmed to take over such jobs as welding and spray painting automobile and truck bodies. They also load and unload hot, heavy metal forms used in machines casting automobile and truck frames. Robots, already taking over human tasks in the automotive field, are beginning to be seen, although to a lesser degree, in other industries as well. There they build electric motors, small appliances, pocket calculators, and even watches. The robots used in nuclear power plants handle the radioactive materials, preventing human personnel from being exposed to radiation.

These are the robots responsible for the reduction in job-related injuries in this new industry. What makes a robot a robot and not just another kind of automatic machine? Robots differ from automatic machines in that after completion of one specific task, they can be reprogrammed by a computer to do another one. As an example, a robot doing spot welding one month can be reprogrammed and switched to spray painting the next. Automatic machines, on the other hand, are not capable of many

different uses. they are built to perform only one task. The next generation of robots will be able to see objects, will have a sense of touch, and will make critical decisions. Engineers skilled in microelectronics and computer technology are developing artificial vision for robots. With the ability to "see", robots can identify and inspect one specific class of objects out of a stack of different kinds of materials. One robot vision system uses electronic digital cameras containing many rows of light-sensitive materials. When light from an object such as a machine part strikes the camera, the sensitive materials measure the intensity of light and convert the light rays into a range of numbers. The numbers are part of a grayscale system in which brightness is measured in a range of values. One scale ranges from 0 to 15, and another from 0 to 255. The 0 is represented by black. The highest number is white. The numbers in between represent different shades of gray. The computer then makes the calculations and converts the numbers into a picture that shows an image of the object in question. It is not yet known whether robots will one day have vision as good as human vision. Technicians believe they will, but only after years of development. Engineers working on other advances are designing and experimenting with new types of metal hands and fingers, giving robots a sense of touch.

Other engineers are writing new programs allowing robots to make decisions such as whether to discard defective parts in finished products. To do this, the robot will also have to be capable of identifying those defective parts. These future robots, assembled with a sense of touch and ability to see and make decisions, will have

plenty of work to do. They can be used to explore for minerals on the ocean floor or deep areas of mines too dangerous for humans to enter. They work as gas station attendants, firemen, housekeepers, and security personnel. Anyone wanting to understand the industry of the future will have to know about robotics. (老师停顿) (以下课文详解分别与上面划线部分内容相链接) 课文详解：1.此句中“becoming increasingly prevalent in factories and industrial plants throughout the developed world”是现在分词短语作伴随状语，插在主语和谓语中间(也可放在句首)。在翻译时可以按照原文语序，即“机器人在所有发达国家的工厂和其他工业部门日益普遍得到应用，通过编程和策划在无人干预的条件下完成工业生产任务。”2. Most of today's robots are employed in the automotive industry, where they are programmed to take over such jobs as welding and spray painting automobile and truck bodies. where 引导非限制性定语从句，对主句起补充说明作用。翻译时，按照原文语序即可。“目前大多数机器人用于汽车工业，它们按编程去承担轿车和卡车车身的焊接和喷漆这样的工作。”3. They also load and unload hot, heavy metal forms used in machines casting automobile and truck frames. 此句中，“casting automobile and truck frames”是现在分词词组作定语修饰machines, 意思是：“铸造轿车和卡车框架的机械”；而“used in machines casting automobile and truck frames”又是“metal forms”的定语，因此本句的意思是：“机器人还可用来装卸铸造轿车和卡车框架的机械上使用的炽热、笨重的金属铸模。”4. Robots, already taking over human tasks in the automotive field, are beginning to be seen, although to a lesser

degree, in other industries as well. 本句中，“already taking over human tasks in the automotive field”是现在分词词组作非限定性定语，相当于一个非限制性定语从句。其中“although to a lesser degree”是状语。“to ... degree”表示“在某种程度上”。翻译：“除了在汽车生产领域替代工人劳动外，机器人也开始在别的工业部门应用，虽然应用的程度上低一些。”

5. The robots used in nuclear power plants handle the radioactive materials, preventing human personnel from being exposed to radiation 句中“used in nuclear power plants”是过去分词短语作定语修饰“the robots”此句话谓语是“handle”意思是搬运，处理。“preventing human personnel from being exposed to radiation”是分词作状语。“prevent ... from doing sth.”

是固定搭配表示“阻止...做...” 6. 在此句中，“in that”是复合连词。表示：“原因是...，因为，在于..”可以看作是引导原因状语从句。与“in that”相类似的复合连词还有：but that (若不是) now that (既然)等。(参看教材P.145的注释4中的例句)

7. As an example, a robot doing spot welding one month can be reprogrammed and switched to spray painting the next. 句中doing spot welding one month 是分词短语作定语修饰robot；the next相当于the next month 与前边的one month 相呼应。本句意思是：“例如，一个机器人这个月做点焊工作，下个月可以重新编程去做喷漆工作。” 8. With the ability to

"see", robots can identify and inspect one specific class of objects out of a stack of different kinds of materials. 介词短语中“to see”是动词不定式作定语修饰“ability”。“out of ...”表示“从...里”。句中with the ability to see是作全句的状语。 9. “

when light from an object such as a machine part strikes the camera, ” 是一个状语从句。句中的 “ from an object such as a machine part ” 是介词短语作后置定语修饰light。 意为：“ 当一个物体(如机器零件)上的光线照射到摄像机上时，... 主句中 “ convert ... into ” 意思是 “ 把... 转换成.. ” 例： We converted the small bedroom into a second bathroom. 我们把这个小卧室改成了另一个浴室。 10. 本句的真正主语是 “ whether ” 引导的主语从句， it 是形式主语； “ as good as human vision ” 是后置定语修饰 “ vision ” 。注意此句按照原语序翻译较好。 “ 迄今尚不清楚机器人会不会有朝一日具有人眼那样的视力。 ” 11 Engineers working on other advances are designing and experimenting with new types of metal hands and fingers, giving robots a sense of touch.。 句中 working on other advances是现在分词短语作后置定语修饰engineers. giving robots a sense of touch是现在分词短语作结构状语。 12. These future robots, assembled with a sense of touch and ability to see and make decisions, will have plenty of work to do. deep此句中 “ assembled ... decisions ” 是一个过去分词作状语。 “ to see and make decisions ” 是不定式短语作定语修饰ability。 13 They can be used to explore for minerals on the ocean floor or in deep areas of mines too dangerous for humans to enter. 句中explore 是不及物动词，词义是 “ 勘探， 勘察 ” ，后面跟介词for, 全句大意是：“ 它们可用在海底探矿或进入对人有危险的矿井深处。 100Test 下载频道开通，各类考试题目直接下载。详细请访问 www.100test.com