科学技術英語特論・演習　木村睦他　金曜２講時

注意：解答用紙は2枚あります。それぞれに学籍番号と氏名を記入してください。

問題１

次の文章はロボットに関する記事で、５つのパラグラフから構成されている。この英文に関する以下の問いに、原文に即して答えなさい。（直訳でなくてよいが、原文の内容を不足なく書くこと。）

Robots are not ready to take their place in our homes. But they are getting better at working closely with humans in industrial settings. That was very evident at this year's International Conference of Robotics and Automation in Hong Kong.

In 2000, Japanese engineers stunned the world with their humanoid robot Asimo, which could walk, run and grasp both hard and soft objects. Fourteen years later, robots are still not ready to help out in our homes, but many mechanical and electrical solutions first applied in those experimental platforms are now being used in industry and medicine. Different mechanical arms and hands are being designed for jobs that require not only greater strength and precision than human hands, but are also safe to operate around people.

Barrett Technology's robotic arm mimics any move done by a human-operated arm, down to the strength of the grip. "You can control forces on a person," he said. "You can control the forces that are being applied by a person. So it's great for rehabilitation, for physical therapy, for surgery, that type of thing." A robot called Baxter is very good at learning even complicated operations, with no need for special software.

General Manager at Shanghai Gaitech Scientific Instruments, Jenssen Chang, says robots like these will increasingly replace humans at menial jobs. "At the same time, you can train the people to do something advanced. This is the so-called development for society," he said. This little robot can locate and kick a soccer ball.

While it cannot do much more, research engineer Jason Jin says it can surely get elementary school students interested in robotics. "Robotics is an integrated kind of subject, including electronics, mechanics and computer science, etc.," he said. "So it has great educational use. Now, after the development of robotics, we can provide children with some more suitable learning tools." By the time those children become robotic engineers, they may be improving robots that are then at work in our homes.

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(1) Asimo の可能な動作を答えなさい。

(2) 第 2 パラグラフの内容より、ロボットの現在の開発状況を答えない。

(3) ロボットアームやロボットハンドの設計要求を答えなさい。

(4) Barrett Technology が製造したロボットアームはこれまでに開発されたロボットアームと異なる点がある。Barrett Technology 社ロボットアームの特徴とこの特徴を活かした適用先について答えなさい。

(5) Jenssen Chang は Barrett Technology 社が開発したようなロボットが今後増えていき、"development for society"に繋がると言っている。その理由を答えなさい。

(6) Jason Jin はロボットは小学校での教育的効用が高いと考えているが、その理由について答えなさい。