You are going to read an article about the use of robots. Six sentences have been removed from the article. Choose from the sentences **A – G** the one which fits each gap (**37 – 42**). There is one extra sentence you do not need to use.

In the exam, you mark your answers **on a separate answer sheet.**

If you're happy, the robot knows it

Robots are gaining the ability to engage us emotionally, giving them a much broader range of uses.

RoCo is what's called an expressive computer. It has a monitor for a head and a simple LCD screen for a face. Inhabiting a back room in the Massachusetts Institute of Technology's media lab, RoCo has a double-jointed neck, which allows it to shift the monitor up and down, tilt it forward and back and move it from side to side.

37 When you hang your head and sink into your chair, RoCo tilts forward and drops low to almost touch the desk, mimicking your gloomy posture. When you perk up and straighten your back, it spots the change and cheerfully swings forward and upward.

RoCo was unveiled at a human-robot interaction conference in Washington DC. Because it responds to a user's changes in posture, its creators hope people might be more likely to build up a relationship with the computer that will make sitting at a desk all day a little more enjoyable. **38**

The team is among a growing number of researchers who are investigating how far a robot's physical presence can influence people. **39** Researchers at Stanford University in California have already proved that an in-car assistance system, for example, can make us drive more carefully if the voice matches our mood. But robots can have a greater impact. 'If it can actually touch you, it's a lot more meaningful,' says Cynthia Breazeal of the Media Lab, who created RoCo with her colleague Rosalind Picard.

Breazeal suggests that RoCo could be programmed to adopt the right posture to foster greater attention and persistence in children. **40** To find out, Aaron Powers at iRobot in Burlington, Massachusetts, and colleagues at Carnegie Mellon University in Pittsburgh, Pennsylvania, invited volunteers to chat about health and happiness with a 1.3-metre-tall, talking humanoid robot called Pearl. They then compared their impressions with those of people who had only heard the robot and seen its projected image.

They found that volunteers rated the physical robot as more trustworthy, sociable, responsive, competent, respectful and lifelike than the projected image of the robot. More importantly, the researchers also found that the physical robot had the most influence over the volunteers. **41** This persuasive power is important and is already being put to use in the classroom. The emphasis is now on the improvement of teamwork and task coordination between humans and robots. But the idea of robots as teammates is not universally accepted. **42** Breazeal argues that this can be resolved by training people and robots together, so that we learn the robot's limitations in advance. 'There might be initial disappointment, but five minutes later we will have figured it out,' she says.

A But does a physical robot really provoke a greater response in people than a much cheaper animated agent on a computer screen could?

B An attached camera can detect when the user changes position, allowing RoCo to adjust its posture accordingly.

C This does not mean that the robots of the future may be able to see things from our point of view and correct us when we make bad decisions.

D Using technology to manipulate someone or shape their mood is nothing new.

E Because robots have no drive to protect themselves, they cannot protect the group, says Victoria Groom, a researcher in human-robot interaction.

F The robot had actually prompted lots of participants to declare that they would take up more healthy activities such as exercising and avoiding fatty foods.

G They also believe that by tuning into users' moods, the robot might help them to get their work done more effectively.