part 3

Read the texts (A-D) and answer the questions. Write A, B, C or D in the boxes. *Transfer answers to answer-sheet (the form on a separate page).*

A — Jason Smith

is a mathematician who is working on a program that aims to make virtual surgery a reality. 'Imagine the benefits of such technology in use! A surgeon will be able to carry out an operation on your "digital double", which is a "virtual you" generated by a computer. By doing so, the surgeon can learn from any mistakes he/she makes. If the surgeon is finally certain of success, he/she then will operate on you without any problems. The surgeon will be able to practise the operation several times before actually doing it, which means that there will be fewer mistakes,' says Jason.

This technology is called surgical simulation and is, without doubt, going to save lives. The method of creating a digital double involves complex geometry and mathematics. 'The possibilities are endless,' adds Jason. 'If the technology was available right now, patients would even be spared of a trip to the doctor's. A scan would be sent to the doctor who would make a correct diagnosis and prepare for the operation before asking the patient to come in.'

B — Jane Watson

is a plant biologist involved in a project which aims to help farmers investigate and monitor plants and the conditions in which they grow. Presently, farmers grow crops without knowing what the end result will be. If they knew what problems could come up, they would take steps to avoid them. Researchers, such as Jane, have combined their expertise in an effort to make it easier for farmers to predict the success of their crops.

'The program is actually a 3D model of a virtual plant growing,' says Jane. 'By entering different parameters, such as temperature, we are able to see the effect that they will have on the plant. Furthermore, once they have planted their crops, farmers will be able to keep an eye on them and improve plant care by giving their crops what they need, when they need it.' When this program is widely used, it will revolutionise effective crop management and it will result in cheaper and better quality food for all.

C — Carol Austen

is an archaeologist who was involved in a ten-year project named 'Rome Reborn 1.0'. This project used advanced technology to digitally rebuild ancient Rome. It is the largest and most complete simulation of a historic city ever created. 'We have digitally recreated monuments that no longer exist, and we have digitally restored sites that have been destroyed with time, but this is by far the most ambitious project ever to be done,' says Carol.

It is a true 3D model that runs in real time. Users of the program can work their way through the model as they wish. It is sure to serve as a prototype for other city models of historic value. 'The good thing is that if new discoveries are made, the program will simply be updated to include them and this is why I think that we will not be able to do without it when teaching our children about ancient Rome,' adds Carol.
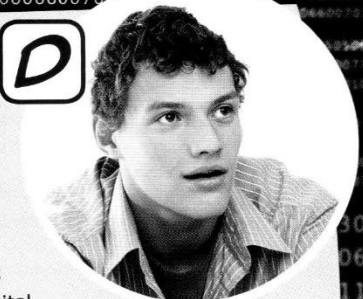
D — Paul Parker

is a 15-year-old boy who is receiving treatment for burns which he got when a pot of boiling water fell onto his leg. It is a well-known fact that the treatment for a burn is worse than the actual injury. For this reason, nurses and physicians at Nationwide Children's Hospital decided to use virtual reality games to help young victims put up with the pain of wound care. Research shows that anxiety and pain are strongly connected and if patients are distracted, anxiety is reduced and the procedure becomes less painful.

'At first the nurses gave me books to look at and sometimes music to listen to, but they did little to lessen the pain of having my wounds taken care of. Then, one day, they let me play with a virtual reality game and I was so engrossed in playing the game that I was surprised when the nurse told me that she had finished dressing my wounds,' says Paul.

Which text:

- refers to a person who benefited personally from the use of virtual reality technology?

13 [ ]

- refers to technology that is of educational value?

14 [ ]

- refers to a person who tried something else before using virtual reality technology?

15 [ ]

- refers to a programme which can be revised to include all the latest information?

16 [ ]

- refers to technology that will help people avoid unnecessary visits to hospitals?

17 [ ]

- refers to technology that minimises human error?

18 [ ]

- refers to technology that will make a product less expensive?

19 [ ]

- refers to a technique that reduces feelings of discomfort?

20 [ ]

- refers to a medical technology that is not available yet?

21 [ ]

- refers to a project that will serve as a model for similar projects?

22 [ ]