Using DNA

This task is about understanding the purpose of an article.

Scientific Police Weapons

A murder has been committed but the suspect denies everything. He claims not to know the victim. He says he never knew him, never went near him, never touched him …
The police and the judge are convinced that he is not telling the truth. But how to prove it?

At the crime scene, investigators have gathered every possible shred of evidence imaginable: fibres from fabrics, hairs, finger marks, cigarette ends… The few hairs found on the victim's jacket are red. And they look strangely like the suspect's. If it could be proved that these hairs are indeed his, this would be evidence that he had in fact met the victim.

Every individual is unique

Specialists set to work. They examine some cells at the root of these hairs and some of the suspect's blood cells. In the nucleus of each cell in our bodies there is DNA. What is it? DNA is like a necklace made of two twisted strings of pearls. Imagine that these pearls come in four different colours and that thousands of coloured pearls (which make up a gene) are strung in a very specific order. In each individual this order is exactly the same in all the cells in the body: those of the hair roots as well as those of the big toe, those of the liver and those of the stomach or blood. But the order of the pearls varies from one person to another. Given the number of pearls strung in this way, there is very little chance of two people having the same DNA, with the exception of identical twins.

Unique to each individual, DNA is thus a sort of genetic identity card. Geneticists are therefore able to compare the suspect's genetic identity card (determined from his blood) with that of the person with the red hair. If the genetic card is the same, they will know that the suspect did in fact go near the victim he said he'd never met.

Just one piece of evidence

More and more often in cases of theft or other crimes, the police are having genetic analyses done. Why? To try to find evidence of contact between two people, two objects or a person and an object. Proving such contact is often very useful to the investigation. But it does not necessarily provide proof of a crime. It is just one piece of evidence amongst many others.

Anne Versailles

We are made up of billions of cells

Every living thing is made up of lots of cells. A cell is very small indeed. It can also be said to be microscopic because it can only be seen using a microscope which magnifies it many times. Each cell has an outer membrane and a nucleus in which the DNA is found.

Genetic what?

DNA is made up of a number of genes, each consisting of thousands of "pearls". Together these genes form the genetic identity card of a person.

How is the genetic identity card revealed?

The geneticist takes the few cells from the base of the hairs found on the victim, or from the saliva left on a cigarette end. He puts them into a product which destroys everything around the DNA of the cells. He then does the same thing with some cells from the suspect's blood. The DNA is then specially prepared for analysis. After this, it is placed in a special gel and an electric current is passed through the gel. After a few hours, this produces stripes similar to a bar code (like the ones on things we buy) which are visible under a special lamp. The bar code of the suspect's DNA is then compared with that of the hairs found on the victim.

Source: Le Liguer, 27 May 1998

Refer to the magazine article above to answer the following questions.

1. To explain the structure of DNA, the author talks about a pearl necklace. How do these pearl necklaces vary from one individual to another?

(**A**) They vary in length.
(**B**) The order of the pearls is different.
(**C**) The number of necklaces is different.
(**D**) The colour of the pearls is different.

2. What is the purpose of the box headed "How is the genetic identity card revealed?" To explain

(**A**) what DNA is.
(**B**) what a bar code is.
(**C**) how cells are analysed to find the pattern of DNA.
(**D**) how it can proved that a crime has been committed.

3. What is the author's main aim?

(**A**) To warn.
(**B**) To amuse.
(**C**) To inform.
(**D**) To convince.

4. The end of the introduction (the first shaded section) says: "But how to prove it?" According to the passage, investigators try to find an answer to this question by

(**A**) interrogating witnesses.
(**B**) carrying out genetic analyses.
(**C**) interrogating the suspect thoroughly.
(**D**) going over all the results of the investigation again.