

DNA Fingerprinting

1 Chromosomes contain molecules of DNA. Genes are small sections of DNA.

Each gene contains a code.

What does a cell use this code for

to combine / use amino acids [1 mark]

in specific / particular / correct / right order [1 mark]

to manufacture protein / enzymes / [1 mark]

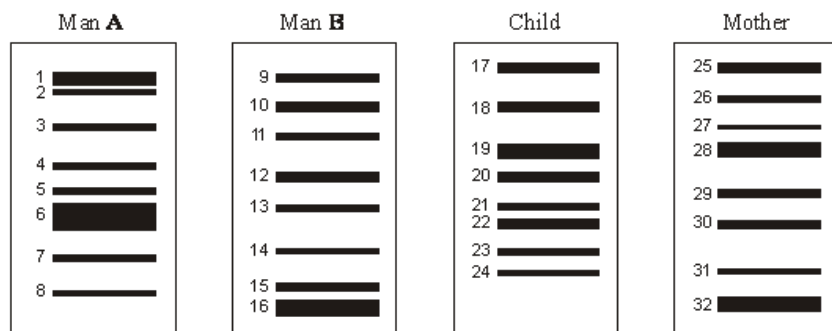
Remember, the way DNA gives you characteristics is by making proteins. You would not have got a mark here for saying anything to do with controlling your features.

(2 marks)

1 (a) (i) DNA fingerprints can be used to identify people. One example of the use of DNA fingerprints is to find out which man is the father of a child.

The diagram shows the DNA fingerprints of a child, the child's mother and two men who claim to be the child's father.

The numbers refer to the bars on the DNA fingerprints.



Which man, **A** or **B**, is more likely to be the father of the child?

B

Use the numbers on the DNA fingerprints to explain your choice.

In your answer you should refer to all four people.

child gets DNA / bars / lines from mother and father / parents [1 mark]

(child has) mother's 25 / 28 / 30 / 31

or child gets 17 / 19 / 22 / 24 from mother [1 mark]

(child has) man B's 10 / 12 / 13 / 14

or child gets 18 / 20 / 21 / 23 from B [1 mark]

Lots of people forget to revise the DNA fingerprinting section and the examiners have noticed this.

"It was evident that a significant number of candidates had not familiarised themselves with DNA fingerprints, in their revision."

Make sure you know it just in case it comes up.

(3 marks)

1 (a) (ii) Only half the bars of the child's DNA fingerprint match the mother's DNA fingerprint.

Explain why.

gametes / eggs / sperm contain only half of (mother's / father's) DNA /
chromosomes / genes / genetic information [1 mark]

due to meiosis [1 mark]

(2 marks)

(Total 7 marks)