

- 6 The saiga antelope is found in the grasslands of Eurasia. In the 1970s its population was 1 250 000. The population has decreased due to loss of habitat and a disease outbreak in 2015.

Population estimates suggest as few as 50 000 individuals remain.

Conservation efforts aim to ensure that the population recovers to previous levels.



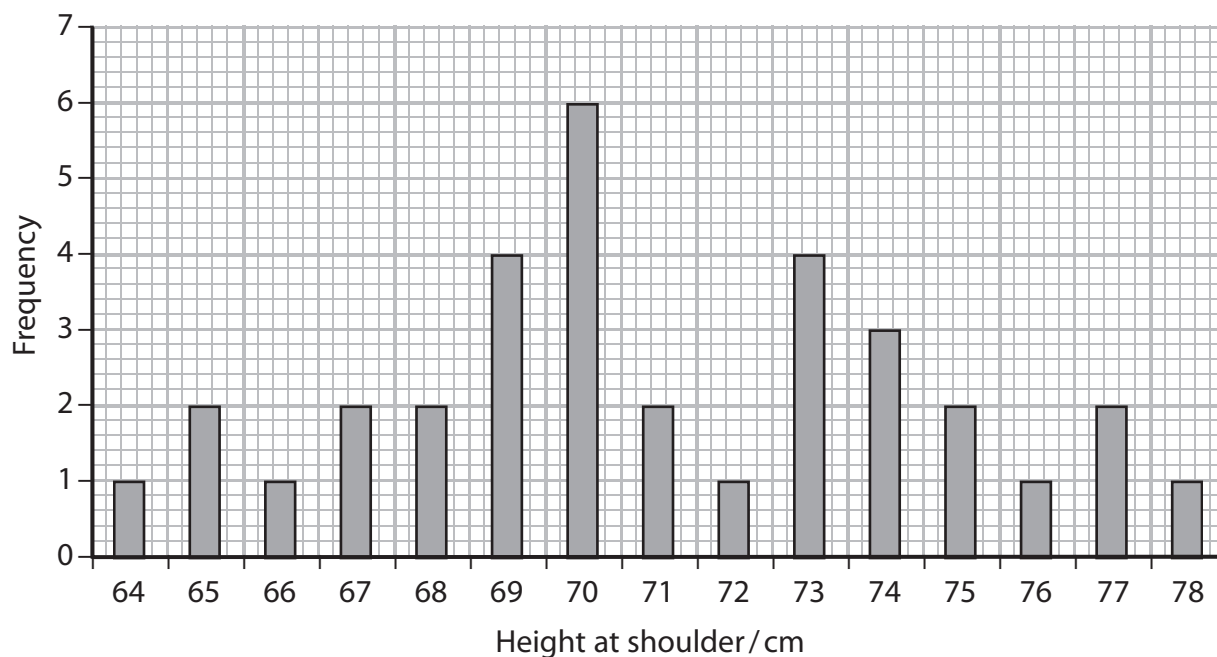
- (a) The population may recover quickly as saiga antelopes usually produce twins.
- (i) Even though both offspring are from the same father and the same mother, they may be genetically different.

Explain why the offspring may be genetically different.

(2)



- (b) Endangered animals are monitored to determine the diversity and viability of the population. The height of 34 saiga antelopes is shown in the graph.



- (i) State how the graph provides evidence that this characteristic shows polygenic inheritance.

(1)

- (ii) Height in animals is determined by polygenic inheritance.

Which is a description of polygenic inheritance of height?

(1)

- A controlled by a large number of alleles of one gene
- B controlled by more than one gene
- C controlled by one gene from each parent
- D controlled by one gene and the environment



(iii) State and justify the mode for height of the saiga antelope.

(2)

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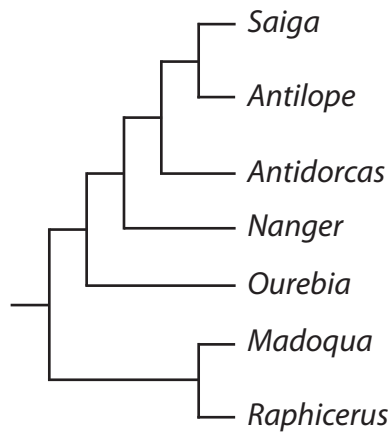
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(c) Saiga antelopes are related to a wide range of other species of antelope.

The diagram shows the phylogenetic relationships between some antelopes.
This diagram was produced using data from analysis of a protein.



(i) Explain how this diagram indicates that saiga antelopes are more closely related to *Antilope* than to *Antidorcas*.

(2)

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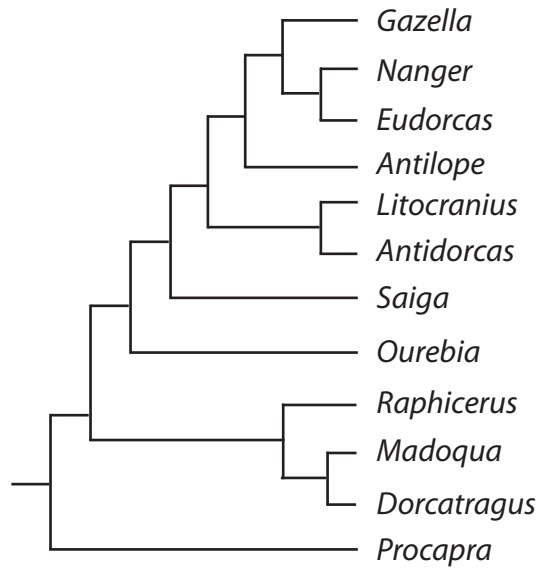
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(ii) This is a more recent classification diagram based on a study of the mitochondrial genomes of antelopes.



Deduce how this study led to different opinions about the relationship between *Saiga* and *Antilope*.

(3)

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(Total for Question 6 = 14 marks)

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