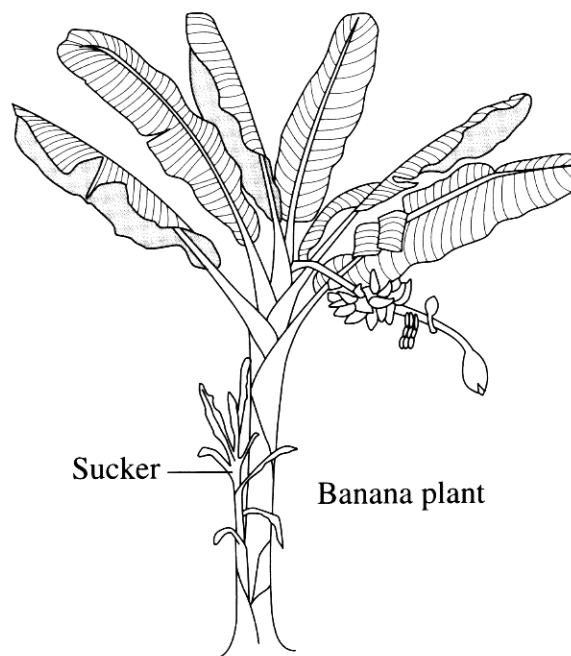


Marks

Question 24 (4 marks)

Traditionally, banana plants in Australia have been propagated asexually by cutting out and planting suckers from the adult plant.

4



There is a growing trend to produce disease-free plants in laboratories through a process of cloning from disease-free tissues from existing plants.

Assess the potential impact of this cloning process on the genetic diversity of banana plants in Australia.

This cloning process would lead to a large amount of disease free banana plants, all of which have the same genetic make up. Instead of an entire crop being made up of many genetically different plant, all the plants would be genetically identical. This would make banana plants open to massive damage from a single disease strain that does effect the currently "disease-free" plants. As such disease-free plants would have an advantage over naturally grown plants, their distribution and abundance would increase while those of naturally grown plants would suffer. That is, genetic diversity would decrease.