

- (c) Scientists have stated that more than a third of critically endangered plant species cannot be saved from extinction by storing seeds in seed banks.

The titan arum is one of these plants.

This plant flowers once every 10 years and the flowers last for two to three days.

The plant can reproduce asexually or sexually. In order to reproduce sexually it relies on insects to transfer pollen to other titan arum plants.

Scientists are developing ways to conserve this plant without losing genetic diversity.

Some of the suggestions include:

- grow more plants produced by asexual reproduction in botanical gardens
- collect pollen when an individual plant flowers and store it in a seed bank
- create a studbook for the species
- artificially pollinate plants in the wild and in botanical gardens.

- (i) The heterozygosity index can be calculated using an equation.

Write this equation.

(1)

- (ii) The heterozygosity index of the 500 titan arum plants in botanical gardens was found to be 0.166.

Calculate the number of heterozygotes in this population.

(1)

Answer