

## Student 1.

### Justification for Utilising Tissue Culture as an Advanced Propagation Technique.

Tissue culture is an asexual technique that enables the propagator to produce large amounts of plants off one plant by using tissue off the parent plant. It enables the propagator to produce large amounts of one plant [2] with the desired traits [3] quickly [4]. It ensures that there is no genetic variation [3] as the propagation is carried out under sterile conditions. This however, can also be a disadvantage because as the plants have no genetic variation it means that they are clones and no mutations have taken place to enable that plant to build up an immune system to pests and diseases which means that one disease can kill a whole crop much more easily than it would be able to if the seeds had been genetically different i.e. sexual propagation. The process, however, is carried out under sterile conditions, which means that it kills any pathogens, pests or diseases already contained on the plant therefore reducing the risk of the parent plant transferring diseases to the offspring [1]. The whole process however can also be quite expensive because there is a lot of materials involved and it is a very delicate process [5], but the success rate is high [2] compared to other asexual and even sexual propagation techniques. Tissue culture is most often used for plants such as orchids.