

2010 HIGHER SCHOOL CERTIFICATE EXAMINATION
Biology

Section I – Part B (continued)

Question 23 (7 marks)

- (a) Use an example to explain why hybridisation within a species is carried out. 2

Hybridisation is carried out to improve quality and characteristics on an animal such as a cow. DNA:DNA hybridisation occurs so the product of the cow would be the finest quality as the particular gene is used.

- (b) Use an example of a named transgenic species to discuss the social and environmental impact of this technology. 5

Bt cotton is an example of a transgenic species. Bt produces toxic which the gene is placed into the cotton plant where it would be pest resistance which will reduce the use of pesticides. However if an outbreak occurs affecting the plant then most of the species won't survive. As they are made from the same gene hence the crop will die and the decrease in biodiversity. Society will be impacted due to decrease in food supply of the particular crop or food product. For example the potatoes were the finest quality created using a particular gene to create the desired characteristic although when a pathogen attacked the crop all plants died due to the similar genetic make up which lead to a decrease in production of potatoes.