

2001 HIGHER SCHOOL CERTIFICATE EXAMINATION

Biology

Section I - Part B (continued)

Marks

Question 22 (6 marks)

- (a) Cloning is a technique that could be used to increase numbers in an endangered species. What effect would cloning have on the genetic diversity of the species? 2

Cloning on species would be bringing out many more species, but, the cloning population would grow very old because cloning brings over age, therefore we will have a lot of bear species, while the natural ones are still going at their own pace.

- (b) Explain TWO possible evolutionary effects of a disease entering an endangered population containing some cloned individuals. 4

① One effect would be that the clones would become very weak for their chromosomes are not as strong as the normal individuals.

② The second, as I said before would be that the effect of over age. The clone are becoming the less immune they are to diseases, therefore the cloned individuals are not likely to catch the disease and suffer or even die in the case.

**Marks**

**Question 23** (3 marks)

In twelfth-century China, people seeking protection from smallpox removed scabs from people mildly scarred from the disease. These scabs were then ground and inhaled as powder. Similarly, in the seventeenth century, an Englishwoman, Mary Montagu, injected bits of smallpox scabs into healthy children to protect them from the disease.

**3**

In the light of our current knowledge about the immune response, explain why these practices were successful.

*Because if you introduce a small amount into the body. The body develops antibodies to help fight it if the disease comes back and tries to infect.*

**Question 24** (4 marks)

Explain the relationship between the cause and ONE symptom of ONE named non-infectious disease.

**4**

*Cardio Vascular Disease -  
one symptom: Coughing  
Cause: smoking of cigarettes  
The relationship between smoking and the coughing is that smoking is the cause of the cough and the disease.*