

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 would effect the genetic diversity of the species, it would not be able to climatise with the environment. And would have to be watch over to make sure it's genetic makeup could handle the environment.

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

The disease entering the endangered population that was cloned ~~could~~ ~~not~~ does not have the immune system to deal with the disease and will die. Because they ~~are~~ were all cloned this means that they are identical and will all die of the disease because they are not altered or different in any way.

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.

These ~~the~~ practices were successful because they were injecting a small amount of the disease into a body which was not enough to harm them. By doing this the immune system became aware of the disease and could easily combat it if it came back.

Question 24 (4 marks)

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

4

Heart disease.
Cause - hereditary, high levels of stress, lifestyle activities eg over excessive amount of physical activity.
SYMPTOMS - Pain in the chest and continuing down the arm.