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**

The effect cloning would have on the genetic diversity of the species is that it would have the same genes as the subject being cloned. This meaning same health problems etc.

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

Two possible evalutionary effects of a disease entering an endangered population containing some cloned individuals is that if the endagered specie is the same as the cloned species ~~the~~ and it is killed by the disease. The disease will effect the cloned species the same way. This resulting with less species left.
Another possible effect is that the disease could effect all of them in different ways. Leaving the scientists with nothing to test a cure on.

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.

The body was subjected to a mild infection of the said disease and in response produced antibodies, the small infection (caused because only a small number of contamnats were introduced) left many healthy antibodies that were able to fight of any further infection alot quicker to prevent onset of that disease.

Question 24 (4 marks)

Explain the relationship between the cause and ONE symptom of ONE named non-infectious disease. **4**

DOWN - SYNDROME.

Cause - the cause of this disease is either when the body makes an extra copy of the chromosome 21, thus have three instead of two. And the other cause is translocation where a part of the chromosome 24, translocates to either the 13-15 chromosome group or the 21-22 chromosome group. A symptom of Down syndrome is the age at which the mother has the child.