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**

All the species would be identical to the clone specie. They would have exactly the same characteristic therefore their wouldn't be a variety and diversity in the specie they would all be the same.

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

Natural Selection could occur this is where the individuals who are suited to this environment will survive and pass on their characteristics. For example this could be the cloned individuals therefore no diversity among species. Also the species may get affected one by one and cannot fight the disease therefore they all become extinct.

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 practices are examples of immunisation. By inhaling or injected these pathogens an immune response is brought about to kill the anti-gen or foreign matter. If the disease enters the body again T-memory cells will remember it and the pathogen will be unable to cause disease.

Question 24 (4 marks)

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

non-infectious disease = CANCER.
Cancer is mutation of cells. Divison + re-growth is stunted.
Lung cancer - caused by cigarette smoke, symptom associated is loss of breath, amnesia, black tar ~~in~~ surrounding inside layer of lungs.