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   2
species. What effect would cloning have on the genetic diversity of the species?

when cloning a species, the genetically produced offspring contains the exact genes as its identical clone. If cloning more than one offspring from one species all genetic codes will be identical causing confusions if breeding procedures wish to be carried out

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

if an endangered species has a disease, any cloned offspring will be developed with the disease.
If all endangered species contract the disease it will not be possible to produce a clone free from the disease.
it could also affect immune systems in the animals

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Marks

Question 23 (3 marks)

In twelfth-century China, people seeking protection from smallpox removed scabs   **3**
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.

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

The people who were infected triggered the immune
response, that then started making B cells to fight
against the pathogen. By exposing the children
to smallpox meant that if they were infected again the
immune response would trigger memory T cells that
would fight the disease + build up an immunity to the disease

Question 24 (4 marks)

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

Cromes disease. is a genetic
disease pased down through
sex-linked. The symptom's are
lose of strength bad stomach
acks, dissiness and vomiting,
coursing lost of weight
and bowl problems.