

Model Answers: Easy

1a

(a) Captive breeding programmes in zoos may help in the protection of endangered species, such as the western lowland gorilla, in the following ways...

Any **three** of the following:

- Fewer (wild) animals need to be caught (for zoos); [1 mark]
- Animals have a greater chance of becoming pregnant (than in the wild) e.g. through IVF / easier to find a mate; [1 mark]
- Reintroduction into the wild (of animals bred in captivity); [1 mark]
- (Scientific) research is easier with captive animals **OR** scientists/researchers can study the species up close/in detail for greater understanding of how to protect it (in the wild); [1 mark]
- (Overall) increase in numbers (of the species); [1 mark]
- Antenatal/postnatal care provided **OR** care provided for animals during/after pregnancy; [1 mark]

[Total: 3 marks]

1b

(b) Disadvantages of captive breeding programmes include...

Any **three** of the following:

- Inbreeding; [1 mark]
- Gene pool too small **OR** low genetic diversity may mean species unable to adapt / leave species vulnerable to changing environment e.g climate change / disease; [1 mark]
- No fear of humans (once reintroduced to the wild); [1 mark]
- Difficulty in socialising with other individuals of the same species (once reintroduced to the wild) **OR** difficulty in reproducing (in the wild); [1 mark]
- Difficulty in finding food; [1 mark]
- (Possible) transfer of pathogens (to wild individuals/populations); [1 mark]
- Other named negative effect of captivity eg. stress; [1 mark]

[Total: 3 marks]

1c

(c)(i) The full name of the CITES treaty is...

- (The) Convention on International Trade in/of Endangered Species (of Wild Fauna and Flora); [1 mark]

(c)(ii) The main aim of CITES is...

- To protect/conservate species which are endangered by trading activities **OR** to prevent the trade of species endangered **OR** to regulate trade at cross border controls; [1 mark]

[Total: 2 marks]

2a

(a) Reasons why the Slippery elm species should be conserved include:

Two from the following:

- To maintain the supply of (traditional) medicine; [1 mark]
- To allow access to potential medicines / useful compounds (that might not yet have

been discovered); [1 mark]

- To preserve habitats for animals / other plants / microorganisms; [1 mark]
- To maintain biodiversity / not to upset the ecological balance; [1 mark]
- To prevent large-scale slaughter / exploitation of trees; [1 mark]

[Total: 2 marks]

2b

(b)

Agricultural advantage example:

One from the following:

- To maintain genetic diversity of crop plants e.g. to protect against disease susceptibility; [1 mark]
- To allow different breeds of crop plant that are well suited to different growing conditions/climates; [1 mark]

Any other plausible agricultural example quoted

Economic advantage example:

One from the following:

- Medicinal products; [1 mark]
- Crop pollination; [1 mark]
- Waste treatment e.g. sewage; [1 mark]
- Eco-tourism; [1 mark]
- General impact on economies of human population decline from famine / loss of human habitats; [1 mark]

Any other plausible economic example quoted

[Total: 2 marks]

2c

(c) Zoos can play a role in conserving endangered species by:

Two of the following:

- Carrying out captive breeding programmes; [1 mark]
- Reintroducing (captive-reared) animals back into the wild; [1 mark]
- Education programmes e.g. school visits with emphasis on conservation; [1 mark]
- Research; [1 mark]

[Total: 2 marks]

2d

(d) The giant panda captivity programme has been unsuccessful in returning giant pandas to their natural habitat because:

One from the following:

- Unsuitable artificial conditions in zoos compared to natural habitat; [1 mark]
- Unsuitable amount / range of food for optimal upkeep of pandas; [1 mark]
- No suitable mate for captive pandas at the time; [1 mark]
- Pandas have a low reproductive rate / short fertility window anyway; [1 mark]

[Total: 1 mark]