

Question Number	Answer	Additional Comments	Mark
8 (a)	<p>QWC – Spelling of technical terms must be correct and the answer must be organised in a logical sequence)</p> <ol style="list-style-type: none"> <li>1. idea that 18 individuals is a small population / small gene pool / low genetic diversity / may have been closely related / eq ;</li> <li>2. captive breeding will increase population ;</li> <li>3. studbooks /records kept of breeding programme / eq ;</li> <li>4. (zoos) select mates ;</li> <li>5. inter-zoo exchange of animals for breeding / eq ;</li> <li>6. idea of the need to prevent inbreeding ;</li> <li>7. idea of avoiding genetic drift ;</li> <li>8. use of { IVF / AI / use of surrogates } ;</li> <li>9. process for measuring genetic diversity described, e.g. DNA profiling / eq ;</li> </ol>	<p>QWC emphasis is clarity of expression</p> <p>ACCEPT reference to 'species' instead of ferret which may arise due to the wording of question.</p> <p>4. Must refer to human intervention – not just the ferrets choosing their mates</p> <p>6. NOT 'interbreeding' in place of 'inbreeding'. ACCEPT 'encourage outbreeding' e.g. ferrets not mated with closely related ferrets</p>	(5)

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8 (b) (i)	<ol style="list-style-type: none"> <li>(captive) population not large enough / number of births is low / eq ;</li> <li>individuals not mature enough / eq ;</li> <li>zoos preparing ferrets for release / eq ;</li> <li>idea of maintaining a population in zoos ;</li> </ol>		(2)

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8 (b) (ii)	<ol style="list-style-type: none"> <li>number of <u>births</u> is rising / eq ;</li> <li>increase in population :</li> <li>idea that more are born than are released e.g. at least 200 births each year ;</li> <li>identification of years when number of <u>births</u> fell, i.e. 1994 or 2000 ;</li> <li>correct manipulation of data ;</li> </ol>	<p>3. Or some understanding that the increases outweigh the decreases, e.g. between 1991-1999 it increased by 230, but only fell by 170 to 2000 from 1999</p> <p>5. Some examples are shown below</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Difference</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>1991-2000 – mp3</td> <td>(220-280) 60</td> <td>(+) 27 / 27.3</td> </tr> <tr> <td>1991- 1999</td> <td>(220-450) 230</td> <td>(+) 105 / 104.5</td> </tr> <tr> <td>1999-2000</td> <td>(450-280) 170</td> <td>(-) 38 / 37.8</td> </tr> </tbody> </table>	Year	Difference	%	1991-2000 – mp3	(220-280) 60	(+) 27 / 27.3	1991- 1999	(220-450) 230	(+) 105 / 104.5	1999-2000	(450-280) 170	(-) 38 / 37.8	(2)
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8 (c)	<ol style="list-style-type: none"> <li>1. idea of habitat as a factor, e.g. loss of habitat / wider range of habitats / eq ;</li> <li>2. availability of { prey / food / prairie dogs /eq };</li> <li>3. competition with other ferrets (for resources) ;</li> <li>4. competition with other species (for resources) / eq ;</li> <li>5. effect of eating { poisoned prairie dogs / poison put out for prairie dogs } / eq ;</li> <li>6. presence of { predators / hunters } / eq ;</li> <li>7. preparation for living in the wild improves chance of survival / if reliant on humans would not survive ;</li> <li>8. idea of too few to be a viable breeding population ;</li> <li>9. idea of presence of disease ;</li> </ol>	<p>Factors provided may either improve or reduce survival chances</p> <ol style="list-style-type: none"> <li>1. climate change can be accepted here as a factor affecting availability of suitable habitat ACCEPT description of human activity that could lead to loss or gain of habitat</li> <li>3. Intraspecific competition</li> <li>4. Interspecific competition</li> <li>7. e.g. kept in semi-wild conditions initially and hunting behaviour encouraged</li> </ol>	(3)