

Question Number	Answer	
<b>*8 (c)(ii)</b>	<p>Answers will be credited according to candidate's deployment of knowledge and understanding of the material in relation to the qualities and skills outlined in the generic mark scheme.</p> <p>The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Additional content included in the response must be scientific and relevant.</p> <ul style="list-style-type: none"> <li>• numbers will increase faster if there are more females hatching</li> <li>• as more females to lay eggs</li> <li>• more eggs increases likelihood of more offspring hatching</li>   <li>• 31°C not selected as there are significantly more males hatching than females / 82:18</li> <li>• more females develop at 29/30/32/33°C</li>   <li>• too few males develop at 29°C</li> <li>• future offspring would only inherit these alleles</li> <li>• reduction in genetic diversity of a population could occur when there are small numbers of one of the sexes</li> <li>• as offspring would only inherit these few alleles</li> <li>• increased number of homozygotes for these few alleles / reduction in heterozygosity index of population over time</li> <li>• reference to competition for mates</li> <li>• more males develop at 30/32/33°C than 29°C</li> <li>• too few males hatching could reduce genetic diversity of offspring</li> <li>• therefore reduced probability of reduction in genetic diversity of future population</li>   <li>• eggs taken from nests throughout National Park are likely to contain different alleles</li> <li>• analyse genetic makeup of individuals</li> <li>• use this analysis to choose individuals for breeding programme / prevent inbreeding</li> <li>• use of stud books</li> </ul>	<b>(6)</b> <b>Expert</b>

			Additional guidance
Level 0	0	No awardable content	
Level 1	1-2	<p>An explanation may be attempted but with limited interpretation or analysis of the scientific information and with a focus on mainly just one piece of scientific information.</p> <p>The explanation will contain basic information, with some attempt made to link knowledge and understanding to the given context.</p>	<p>A temperature selected with an attempt to explain why</p> <p>OR</p> <p>basic recognition of male:female ratio = 1 mark</p> <p>attempt at explanation of need for acceptable male:female ratio (e.g. more females than males would increase population faster) = 2 marks</p> <p>basic comments linked to genetic diversity (not linked to graph)</p>
Level 2	3-4	<p>An explanation will be given, with occasional evidence of analysis, interpretation and/or evaluation of both pieces of scientific information.</p> <p>The explanation shows some linkages and lines of scientific reasoning, with some structure.</p>	<p>Level 1 content plus supported reasoning of selection of {30/32/33} °C to address idea of increase population quickly e.g. consideration of appropriate male:female ratio (depth of answer determines mark)</p> <p>OR</p> <p>explanation linked to way(s) in which genetic diversity could be maintained (depth of answer determines mark)</p>
Level 3	5-6	<p>An explanation is made that is supported throughout by sustained application of relevant evidence of analysis, interpretation and/or evaluation of both pieces of scientific information.</p> <p>The explanation shows a well-developed and sustained line of scientific reasoning, which is clear and logically structured.</p>	<p>All level 2 content plus</p> <p>Supported reasoning of selection of {30/32/33}°C plus</p> <p>linked to maintaining genetic diversity</p> <p>(depth of answer determines mark)</p>