

Question Number	Answer
8 (d)	<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> <p>Basic information</p> <ul style="list-style-type: none"> <li>• genotype is shown by the different allele combinations</li> <li>• the gene has {multiple / four} alleles</li> <li>• one copy of each allele is inherited from each {parent / gamete}</li> <li>• phenotype is the result of interaction between the genotype and the environment / phenotype can sometimes just be determined by genotype</li> <li>• fur colour is affected by {genotype /allele combinations} and the {environment /(body) temperature}</li> <li>• colour may be camouflage</li> </ul> <p>Enzyme production</p> <ul style="list-style-type: none"> <li>• the {gene / alleles} code(s) for the production of an enzyme involved in producing fur colour</li> <li>• (active) mRNA is produced from the allele(s) leading to synthesis of {protein / enzyme}</li> </ul> <p>Black rabbit</p> <ul style="list-style-type: none"> <li>• black rabbit has the dominant allele (C) / is homozygous dominant / heterozygous dominant</li> <li>• C is the dominant allele</li> </ul> <p>Albino rabbit</p> <ul style="list-style-type: none"> <li>• albino has recessive alleles / is homozygous recessive</li> </ul> <p>Himalayan linked to enzyme</p> <ul style="list-style-type: none"> <li>• {Himalayan albino / <math>c^h c^h</math> / <math>c^h c^a</math>} produce the enzyme which becomes inactive at high temperatures</li> <li>• the enzyme must be involved in producing the dark colour of the fur</li> </ul> <p>Himalayan explanation</p> <ul style="list-style-type: none"> <li>• the colour is not produced at body temperatures in Himalayan albino, causing the {warmer part of the body to have white fur / cooler parts of the body to have dark fur}</li> </ul>
	<b>(6)</b>
	Additional guidance

Level 0	0	No awardable content	
Level 1	1-2	<p>Demonstrates isolated elements of biological knowledge and understanding to the given context with generalised comments made.</p> <p>Vague statements related to consequences are made with limited linkage to a range of scientific ideas, processes, techniques and procedures.</p> <p>The discussion will contain basic information with some attempt made to link knowledge and understanding to the given context.</p>	<p>1 aspect correctly discussed with some attempt made to link knowledge and understanding to the given context = 1 mark</p> <p>2 aspects correctly discussed with some attempt made to link knowledge and understanding to the given context = 2 marks</p>
Level 2	3-4	<p>Demonstrates adequate knowledge and understanding by selecting and applying some relevant biological facts / concepts.</p> <p>Consequences are discussed which are occasionally supported through linkage to a range of scientific ideas, processes, techniques and procedures.</p> <p>The discussion shows some linkages and lines of scientific reasoning with some structure.</p>	<p>3 aspects correctly discussed which some linkages and lines of scientific reasoning with some structure = 3 marks</p> <p>4 aspects correctly discussed which some linkages and lines of scientific reasoning with some structure = 4 marks</p>
Level 3	5-6	<p>Demonstrates comprehensive knowledge and understanding by selecting and applying relevant knowledge of biological facts / concepts.</p> <p>Consequences are discussed which are supported throughout by sustained linkage to a range of scientific ideas, processes, techniques and procedures.</p> <p>The discussion shows a well-developed and sustained line of scientific reasoning which is clear and logically structured.</p>	<p>A well-developed and sustained line of scientific reasoning for 5 of the 6 aspects which is clear and logically structured = 5 marks</p> <p>A well-developed and sustained line of scientific reasoning for all 6 aspects which is clear and logically structured = 6 marks</p>