

Question	Marking Guidance	Mark	Comments
10.1	<p>1. Fat (store) used in respiration/metabolism; 2. Less energy/food (store) is required due to low respiration/metabolism</p> <p>OR</p> <p>Less energy/food (store) is required due less movement;</p> <p>3. Gluconeogenesis; 4. Low surface area to volume reduces heat loss</p> <p>OR</p> <p>Fat (layer/insulation) reduces heat loss;</p> <p>5. Long loop of Henle so less water lost; 6. Water provided from respiration; 7. Reduced/no urination; 8. Less evaporation;</p>	3 max	<p>Mark points 1 to 4 = 2 max.</p> <p>Mark points 5 to 8 = 2 max.</p> <p>1 and 2. Reject respiration 'uses energy' or 'produces energy'.</p> <p>3. Accept description in terms of using glycerol, fatty acids or amino acids.</p> <p>5. Accept thick medulla (in kidney) for long loop of Henle.</p> <p>8. Accept less sweating.</p>
10.2	<p>1. (Lower metabolism so) less/low CO₂ (in blood); 2. (Detected by) chemoreceptors; 3. (Chemoreceptors) located in aorta/medulla</p> <p>OR</p> <p>(Chemoreceptors) located in carotid artery;</p> <p>4. Fewer impulses to cardiac centre;</p> <p>OR</p> <p>Fewer impulses to medulla (oblongata);</p> <p>5. (More) impulses along parasympathetic/vagus pathway/neurones/nerve</p> <p>OR</p> <p>Fewer impulses along sympathetic pathway/neurones/nerve;</p> <p>6. (To) SAN;</p>	4 max	<p>If neither mark point 1 or 2 credited = 3 max.</p> <p>1. Accept increase in pH or decrease in H ions/acidity for less CO₂. Ignore baroreceptors.</p> <p>2. Ignore detects oxygen, (concentration).</p> <p>3. Accept carotid body or aortic body.</p> <p>4 and 5. Reject (once only) reference to 'an/one impulse'.</p> <p>4 and 5. Reject 'signals', 'messages' (once only) for 'impulses'</p> <p>4 and 5. Accept 'action potential/s' for impulses.</p>

<p>10.3</p>	<p>1. Allow passage of protons/H⁺; 2. (Energy) released as heat;</p>	<p>2</p>	<p>1. Ignore direction of movement/diffusion/active transport. 2. Accept 'produces heat' but reject 'produces 'heat energy'.</p>
<p>10.4</p>	<p>1. Less snow so less camouflage; 2. More hares seen/eaten/killed by predators;</p>	<p>2</p>	<p>1. Accept 'snow melts' 1. Accept description of less camouflage, e.g. more hares seen. 2. Accept description of predation.</p>
<p>10.5</p>	<p>1. Hares which moult earlier (more likely to survive); 2. Hares which moult earlier (more likely to reproduce); 3. Pass on (advantageous) <u>allele</u>; 4. Frequency of <u>allele</u> increases (in future populations);</p>	<p>4</p>	<p>1. Accept less likely to be killed for 'survive'. 1. Accept description of survival e.g. not killed/eaten. 1. Accept moult quicker/faster for earlier. 1 and 2. Answers must be in the context of moulting earlier/quicker/faster. Accept rabbits for hares. 2 and 3. Accept 'pass on allele to offspring' or 'to next generation' = 2 marks. 4. 'More alleles' is not enough for a mark.</p>