

## 0172 Level 3 Technicals in Animal Management (Zoos) – 0172-539/039

Q	Acceptable answer(s)	Guidance	Max mks	Ref
1	<p>1 mark for any of the following, maximum of 3 marks.</p> <ul style="list-style-type: none"> <li>• VAT (1)</li> <li>• Income tax PAYE records (1)</li> <li>• NI contributions (1)</li> <li>• Corporation tax records (1)</li> <li>• Wage records (1)</li> <li>• Invoices (1)</li> </ul> <p>Any other appropriate response.</p>	Only accept records relevant to taxation.	3	364 4.1 AO1
2	<p>1 mark for any of the following, maximum of 4 marks.</p> <ul style="list-style-type: none"> <li>• respiratory distress</li> <li>• gaping beak</li> <li>• coughing</li> <li>• sneezing</li> <li>• gurgling</li> <li>• rattling</li> <li>• nervous signs characterised by tremors</li> <li>• paralysis and twisting of the neck</li> <li>• diarrhoea</li> <li>• depression</li> <li>• lowered egg production</li> <li>• lack of appetite</li> </ul>		4	314 2.2 AO1
3	<p>1 mark each for issue, 1 mark for effect, maximum 2 marks for each issue with effect.</p> <ul style="list-style-type: none"> <li>• <b>Issue:</b> <i>Malnutrition</i> - incorrect nutrition through poor diet (1) <b>Effect:</b> leads to deficiencies and lower immunity (1)</li> <li>• <b>Issue:</b> <i>Illness</i> - disease caused by poor hygiene (1) lack of observation resulting in missed signs of ill health (1) lack of accurate records kept could lead to errors in treatments (1) not carrying out routine preventative treatments (1) <b>Effect:</b> can lead to other health problems (1) can results in the death of the animal</li> <li>• <b>Issue:</b> <i>Poisoning</i> - incorrect application and usage of cleaning chemicals (1) <b>Effect:</b> can lead to sickness or death (1)</li> <li>• <b>Issue:</b> <i>Disease transmission</i> - accelerated by overcrowding (1) <b>Effect:</b> can lead to stress due to incorrect housing conditions (1)</li> </ul> <p>Any other appropriate response.</p>	Maximum of 2 marks for effects only.	4	314 2.2 AO2

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<p><b>4</b></p>	<p>1 mark for any of the following, maximum of 2 marks.</p> <ul style="list-style-type: none"> <li>• The Zoo Licensing Act 1981 (include year for mark)</li> <li>• CITES</li> <li>• Animal Health Legislation (Balai Directive)</li> <li>• Secretary of State’s standards of modern zoo practice</li> <li>• Animal Welfare Act 2006</li> <li>• Animal Health and Welfare Act 2006.</li> </ul> <p>Any other appropriate response.</p>	<p>Do not accept legislation that isn’t directly linked to Zoological collections in the UK (e.g. Health and Safety).</p> <p>Acts must include year to award mark.</p>	<p><b>2</b></p>	<p><b>316 3.1 AO1</b></p>
<p><b>5a</b></p>	<p>1 mark for identifying disease, maximum of 1 mark <b>Disease:</b> White spot/Ichthyophthirius (1)</p>	<p>Allow ‘Ich’</p>	<p><b>1</b></p>	<p><b>313 4.1 AO1</b></p>
<p><b>5b</b></p>	<p>1 mark for stating pathogen <b>Pathogen:</b> Protozoan parasite (1)</p>	<p>Allow parasite or protozoa only.</p>	<p><b>1</b></p>	<p><b>313 4.1 AO1</b></p>
<p><b>6</b></p>	<p>1 mark for any of the following, maximum of 3 marks.</p> <ul style="list-style-type: none"> <li>• Lighting proximity/windows</li> <li>• Power sources</li> <li>• Proximity to water</li> <li>• Passing foot traffic</li> <li>• Weight/floor loading</li> <li>• Noise</li> <li>• Temperature</li> <li>• Waste disposal</li> <li>• Away from predators</li> <li>• Vibrations</li> </ul> <p>Any other appropriate variations.</p>		<p><b>3</b></p>	<p><b>313 1.3 AO1</b></p>
<p><b>7</b></p>	<p>1 mark for any of the following, maximum of 4 marks.</p> <ul style="list-style-type: none"> <li>• Natural materials are safer to use e.g. wood/grass/plants/earth (1)</li> <li>• Aesthetics for the public viewing (1)</li> <li>• Promoting natural behaviours (1)</li> <li>• Simulate the animals natural environment (1)</li> <li>• Increase use of available space (1)</li> </ul> <p>Any other appropriate response.</p>		<p><b>4</b></p>	<p><b>314 1.3 AO2</b></p>
<p><b>8</b></p>	<p>1 mark for any of the following, maximum of 3 marks.</p> <ul style="list-style-type: none"> <li>• Mechanical filter exchanges the water and traps particles (1)</li> <li>• Chemical filter e.g. carbon filter removes pathogens (1)</li> <li>• Biological filter e.g. sponges used to maintain bacteria to remove harmful chemicals (1)</li> </ul>	<p>Maximum of 2 marks for listing factors.</p> <p>Award marks for explaining how filtration maintains the health and stability of an aquarium, maximum of 2 marks if no example is included.</p>	<p><b>3</b></p>	<p><b>313 1.2 AO2</b></p>

<b>9</b>	<p>1 mark for any of the following strategies, maximum of 6 marks.</p> <ul style="list-style-type: none"> <li>• Different species require different feeding strategies (1)</li> <li>• Filter feeders need food that dissolves in the water (1) because they feed by straining suspended matter and food particles from water (1)</li> <li>• Surface feeders need food that will float on the surface (1) because they won't dive for food (1)</li> <li>• Substrate/bottom feeders need food that will sink to the bottom (1) because they pick up gravel suck up the food then spit gravel out (1)</li> </ul> <p>Any other appropriate response.</p>		<b>6</b>	<b>313</b> <b>3.1/3.2</b> <b>/3.3</b> <b>AO2</b>
<b>10</b>	<p>1 mark for any of the following descriptions, maximum of 3 marks.</p> <ul style="list-style-type: none"> <li>• <b>Environment (1)</b> simulate a natural environment to promote natural behaviour (1) Light conditions – Increased photoperiod stimulates breeding cycle (1) temperature – rise in temperature normally stimulates breeding cycle (1) season - seasonality stimulates breeding period (1) hormonal activity – oestrogen increase stimulates egg production (1) food availability – Birds will only breed if there is enough food for young to survive (1)</li> <li>• <b>Pairing birds and introductions (1)</b> to ensure there is no aggression (1) to ensure birds are at the correct stage for breeding (1) to ensure birds are compatible (1)</li> <li>• <b>Timings (1)</b> required incubation periods (1) fledging (1) life span (1)</li> <li>• <b>Space (1)</b> holding capacity of enclosure to avoid overcrowding (1) nest availability (1) avoid competition (1)</li> </ul> <p>Any other appropriate response.</p>	Only 1 mark available for factors, 2 marks for reasons.	<b>3</b>	<b>314 4.2</b> <b>AO2</b>

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<p><b>11</b></p>	<p>1 mark for any of the following techniques, up to 2 marks plus 1 mark for each associated description (up to 4 marks), maximum of 6 marks.</p> <ul style="list-style-type: none"> <li>• <b>Sensory (1):</b> scent trails (1) blood trails (1) lights (1) sounds (1)</li> <li>• <b>Social (1):</b> group structure (1) dynamics (1)</li> <li>• <b>Training (1):</b> increase exercise (1) target training to work safely with animals (1)</li> <li>• <b>Physical (1):</b> platforms (1) balls (1) ropes (1) swings (1) frames (1) raised areas (1) swimming areas (1)</li> <li>• <b>Food (1):</b> scatter feeding (1) puzzle feeders (1) browse (1) whole carcass (1) live food (1)</li> </ul> <p>Any other appropriate response.</p>	<p>Descriptions must be appropriate for the mammal.</p> <p>Maximum of 2 marks awarded for types of enrichment. Up to 4 marks for descriptions.</p> <p>Do not award marks if a mammal is not stated or enrichment is not appropriate for the species.</p>	<p><b>6</b></p>	<p><b>316 2.2</b> <b>AO2</b></p>
<p><b>12</b></p>	<p>1 mark for any of the following, maximum of 5 marks.</p> <p><b>Nutritional requirements for a geriatric zoo animal:</b></p> <ul style="list-style-type: none"> <li>• Less energy (1) required for growth/activity (1)</li> <li>• High protein (1) for repair (1)</li> <li>• Calcium (1) for bone strength (1)</li> <li>• Possible dentition problems (1) food may need presenting differently (1)</li> <li>• More concentrated food (1) as animal may have reduced appetite (1)</li> <li>• Supplements used (1) to boost vitamin/mineral intake (1)</li> <li>• Health issues that require changes in diet (1)</li> </ul> <p><b>Feeding requirements for a geriatric zoo animal:</b></p> <ul style="list-style-type: none"> <li>• Separating the geriatric during feeding (1) to avoid competing for food (1)</li> <li>• Smaller and more frequent meals (1) to help with digestion (1) lower energy levels (1)</li> <li>• More palatable food required (1) to entice animals with low appetite to eat (1)</li> </ul> <p>Any other appropriate response.</p>	<p>Maximum of 3 marks for either feeding or nutritional requirements.</p> <p>Requirements must relate to a geriatric animal.</p>	<p><b>5</b></p>	<p><b>316 4.2</b> <b>AO2</b></p>

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<b>13</b>	1 mark for any of the following, maximum of 3 marks. <ul style="list-style-type: none"><li>• Monitoring production levels (1) to indicate inefficient costs (1) track/forecast production against sales (1)</li><li>• Efficiency monitoring (1) evaluate performance against competitors (1)</li><li>• Access to relevant information (1) statistics for review (1) Relevant review periods: weekly/monthly/quarterly/annual updates to review projections (1)</li><li>• Monitoring profits and income (1) to help to make decisions on the growth of the business (1)</li><li>• Monitor staffing levels (1) make informed decisions on remedial actions (1) monitor current financial climate (1) monitor business growth (1) development (1) and decline (1) to identify recruitment needs (1)</li></ul> Any other appropriate response.	Do not award marks for animal related records.	<b>3</b>	<b>364 4.3</b> <b>AO2</b>
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<b>14</b>	<p><b>Band 1:</b> 1-4 marks Brief discussion of the considerations, with a limited use of examples. Clear gaps in knowledge were present and limited understanding of the topics shown. Technical terminology is used infrequently or inaccurately. To access the higher marks in the band the candidate will have attempted to link their examples to the impacts on animal welfare and the success of the business, but these may not all be valid.</p> <p><b>Band 2:</b> 5-8 marks Detailed discussion of a range of ethical considerations, but these may not always be linked to the impact on animal welfare. Key points in relation to the marketplace were discussed in detail, with some gaps in knowledge present, but a good understanding of the topics were shown. Technical terminology is used frequently and mostly accurately. To access the higher marks in the band the candidate will have linked their examples to the impacts on animal welfare and the success of the business, using a good range of examples.</p> <p><b>Band 3:</b> 9-12 marks Comprehensive discussion with a wide range of examples of the ethical considerations, which are consistently linked to the impact on animal welfare. Key points in relation to the marketplace were discussed coherently, there may be minor gaps in knowledge present, but a thorough understanding of the topics were shown. Technical terminology is used frequently and accurately throughout. To access the higher marks in the band the candidate will have linked a wide range of specific and valid examples to the impacts on animal welfare and the success of the business.</p> <p>For no awardable content, award 0 marks.</p>	<p><b>Indicative content:</b></p> <p><b>Marketplace considerations</b></p> <ul style="list-style-type: none"> <li>• Physical resource requirements</li> <li>• Marketplace</li> <li>• Customers and competitors</li> <li>• Supply chain</li> <li>• Licencing requirements</li> </ul> <p><b>Animal ethical considerations</b></p> <ul style="list-style-type: none"> <li>• Ethics of sourcing livestock</li> <li>• Causes of disease</li> <li>• Techniques for handling and restraint of zoo animals</li> <li>• Animal welfare considerations</li> <li>• Transport of animal considerations</li> </ul>	<b>12</b>	<p>(314) 2.2 (364) 3.1,3.2, 2.2 (316) 1.3, 4.4 (313) 5.2  AO4</p>
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