

**Qualification: 0172-535 Level 3 Advanced Technical Extended
Diploma in Animal Management (720) – Theory Exam (2)**

2019 (Paper 1)

1	Define the term natality.		
	Acceptable answer(s)	Guidance	Max mks
	1 mark for correct definition, maximum of 1 mark The ratio of the number of births to the size of the population (1)/ birth rate within a population (1) Any other appropriate answer.		1
2	State three roles of the Royal Society for the Protection of Birds (RSPB).		
	Acceptable answer(s)	Guidance	Max mks
	Maximum of 3 marks. Identifying threats facing birds (1), work out ways to prevent further decline of species (1), establish/manage reserves (1), ongoing research (1) into population fluctuations through conservation science (1), safeguarding species (1), conservation/sustainability (1) Any other appropriate answer.		3

3	<p>A) Define the term divergent evolution within animal populations (1 mark) B) Using two examples, explain how divergent evolution has affected an ecosystem over time (4 marks)</p>		
	<p>Acceptable answer(s)</p> <p>A) Max 1 mark Groups from the same common ancestor evolving and accumulating differences (or modifications), resulting in the formation of new species (1)</p> <p>B) 1 mark for suitable example and 1 mark for corresponding explanation. Maximum of 2 marks awarded for appropriate examples.</p> <ul style="list-style-type: none"> • Increased/ decreased pressure from competition/predation (1) e.g. Results in speciation (1) • Gene flow maybe restricted (1) increased/ decreased reproduction (1), e.g. explosion/decline in species numbers • Physical/ geographical barrier can restrict breeding(1), e.g. flood expanding river and dividing population (1) • Increase/ decrease in food source/habitat (1), fluctuations of species (1), e.g. introduction of new species into ecosystem providing food for higher order species (1) • Greater adaptation to change in food source/habitat/environment (1), e.g. beaks of Darwins finches (1), limbs enabling species to climb (1) species adapted with favourable aspects spread through the gene pool /survive (1) the individuals without favourable features died out (1) 	<p>Guidance</p> <p>a) Accept any variation of wording, must have key elements : same ancestor, differences, new species</p> <p>b) Effects must be relevantly linked to the cause, to both if used more than once.</p>	<p>Max mks</p> <p>5</p>
4	<p>Explain two reasons for global wildlife population fluctuations in mammals.</p>		
	<p>Acceptable answer(s)</p> <p>1 mark awarded for each reason, 1 mark for explanation.</p> <p>Reason: Seasonality changes (1) Explanation: affecting plant growth/food sources. (1)</p>	<p>Guidance</p> <p>Explanations must be relevantly linked to the reason, to both if used more than once.</p>	<p>Max mks</p> <p>4</p>

	<p>Reason: Migration (1) Explanation: animals move to find water/food sources (1), to avoid less favourable/find more favourable conditions/weather (1)</p> <p>Reason: Emerging diseases (1) Explanation: transmitted by humans/other animals which affect wild population (1)</p> <p>Reason: Climate change (1) Explanation: flooding/drought/wildfires could cause decline in population (1), could lead to migration (1)</p> <p>Reason: Habitat destruction (1) Explanation: deforestation of habitat causing decline of species (1), urbanisation/fragmentation causing decline in species (1)</p>		
5	<p>Provide one example of how the following reproductive strategies aid survival:</p> <p>a) Parental care b) Viviparous birth</p>		
	Acceptable answer(s)	Guidance	Max mks
	<p>1 mark per example.</p> <p>a) Parental care – young cared for by dam/sire/both to optimise survival (1), one parent hunts while other cares for young (1), young are taught survival skills by one/ both parent (1), other family members foster/surrogate young when required (1), young survive often in absence of parent (1)</p> <p>b) Viviparous birth – no need to incubate/look after eggs (1), young can be precocious (1), parent is able to move offspring easier (1), live young have the opportunity to escape danger (1)</p> <p>Accept any other appropriate answer.</p>		2
6	<p>Explain how two suitable treatments for each of the following conditions can support recovery:</p> <p>a) Psittacosis b) Malocclusion</p>		
	Acceptable answer(s)	Guidance	Max mks

	<p>Max 2 marks per treatment, max 4 per condition.</p> <p>a) Psittacosis</p> <p>Treatment – Antibiotics (1) to kill off the bacterial infection (1) Fluid therapy (1) to rehydrate the animal/replace fluids lost from diarrhoea (1) Anti-inflammatory medication (1) to reduce swelling/ease discomfort (1)</p> <p>b) Malocclusion</p> <p>Treatment – Cut/clip teeth (1) temporarily resolve the condition (1) Removal of tooth (1) prevents the condition from reoccurring (1) Antibiotics (1) to kill off bacterial infection (1)</p> <p>Accept any other appropriate answer.</p>		8
7	<p>An animal enthusiast wishes to start a private collection of exotic animal species. What do they need to consider in relation to the Dangerous Wild Animals Act 1976?</p>		
	<p>Acceptable answer(s)</p>	<p>Guidance</p>	<p>Max mks</p>
	<ul style="list-style-type: none"> • Licence is required to keep specific animals (1) • Must be inspected on a regular basis (1) • Must allow access to inspectors (1) • Compliance with the act to retain licence/ avoid prosecution (1) • To ensure appropriate premises are used (for holding) (1) <p>Any other appropriate answer, from http://www.legislation.gov.uk/ukpga/1976/38</p>		4
8	<p>State two different methods used to identify individual exotic animals, giving a species specific example for each.</p>		
	<p>Acceptable answer(s)</p>	<p>Guidance</p>	<p>Max mks</p>

<p>1 mark for each method identified, 1 mark for relevant example.</p> <ul style="list-style-type: none"> • Method: Physical characteristics (1), colour/markings / horns/antlers / male/female physical attributes / deformities (1) Animal: e.g. red deer antlers of stag (1) • Method: Transponders/microchip (1) Animal: e.g. bison/buffalo (1), meerkats (1) • Method: Ear tags (1) Animal: e.g. rhino (1), giraffe (1), zebra (1) • Method: Rings (1) Animal: e.g. flight birds (1), flamingos (1), poultry (1) • Method: Tattooing (1) Animal: big cats (1), canids (1) • Method: Mutilation (1), tail docking/ ear notching (1) Animal: e.g. rhino (1) • Method: Freeze branding (1) Animal: equids (1), ungulates (1) • Method: Collars (1) Animal: equids (1), bison (1) <p>Any other appropriate response.</p>		4
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9	Explain the importance of staff training in relation to potential emergencies in a zoo.		
	Acceptable answer(s)	Guidance	Max mks
	<p>Staff training to be kept up to date (1) all staff should be aware of responsibilities/duties (1) legal requirement for up to date training (1) clearly delegated roles (first aiders/fire marshall/ trained with fire arms) (1) minimise potential impact/damage (1) Awareness of drill procedures/evacuation routes (1) Awareness of communication methods (1) Awareness of chain of command (1) review of current threats (1)</p> <p>Any other appropriate answer.</p>	Needs more for explanation	5
10	Describe four challenges of feeding exotic omnivores in captivity.		
	Acceptable answer(s)	Guidance	Max mks

<p>1 mark per description.</p> <ul style="list-style-type: none">• Different nutritional content in wild compared to specialist food bought into a zoo (1)• Seasonality may impact on food availability (1)• Difficult to mimic some species diets (1)• Supplements may be needed in captivity (1)• Difficult to ensure the individual is eating a balanced diet (1)• Feeding of group animals is difficult to monitor (1)• Fighting/competition/hierarchy for more desirable food (1) <p>Any other appropriate response.</p>		4
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- 11 a) Give **three** reasons why a wet moat may be an unsuitable barrier type. (3 marks)
- b) Give **three** reasons why solid glass may be a suitable barrier type. (3 marks)

Acceptable answer(s)			Guidance	Max mks
Barrier type	Advantage	Disadvantage		6
Wet moat		<ul style="list-style-type: none"> • Undesirable objects can be thrown into moat (1) • Not suitable for swimmers (1) • Can be more challenging for keeper management (1) • Can invite water-borne diseases into zoos (1) • High cost to set up initially/maintain (1) • Increased risk to visitor safety (1) 		
Solid glass	<ul style="list-style-type: none"> • Good view for public (1) • Strong/protective for animal/visitor safety (1) • Provide physical/psychological stimuli (for the animal) (1) • Not likely to cause injury to animals/visitors (1) • Increase (natural) light into the enclosure (1) • More aesthetically pleasing (for visitors) • Allows enclosure to look/feel bigger (1) 			
Accept any other appropriate answer.				

12	Explain one way a zoo can increase their sustainability through recycling.		
	Acceptable answer(s)	Guidance	Max mks
	<p>1 mark per explanation.</p> <p>Reduce energy consumption/reduce need to produce more new products (1) Reduce carbon footprint/more environmentally friendly/reduce need to produce more (1) Reduce waste/using less products (1) Reduce costs (1)</p> <p>Any other appropriate response.</p>		2

13	Zoological collections have changed dramatically over the past century in the UK. Discuss the role of collections over time and what has driven such changes to where they are today.		
	Acceptable answer(s)	Guidance	Max mks
	<p>Band 1 (1-4 marks)</p> <p>The learner has given a brief answer which includes limited reference to roles of collections with clear gaps in knowledge. Only one aspect of the change may have been discussed.</p> <p>For the higher marks in the band, learners have made some links between the roles and changes. Technical terminology may be used infrequently and not always accurately.</p> <p>Band 2: (5-8 marks)</p> <p>The learner has given a detailed answer which includes some references to roles of collections with some gaps in knowledge. Learner has discussed more than one element of change.</p> <p>For the higher marks in the band, learners have made relevant links between the roles and changes with some consideration to ethics. Technical terminology may be used frequently with some minor inaccuracies.</p> <p>Band 3: 9-12 marks</p> <p>The learner has given a comprehensive answer which includes detailed references to roles of collections with few gaps in knowledge. Learner has thoroughly discussed more than one element of change.</p>	<p>Indicative content: History of zoos, menageries, welfare and health and safety Entertainment Conservation strategies Education of exotic species to visitors Global breeding strategies, record keeping, links through BIAZA etc Zoo layout and enclosure design including welfare, health and safety, biosecurity, enrichment Legislation and licensing regulations Research and monitoring of species Change in role of staff, public and inspector Pressures, perceptions and expectations Ethics</p>	12

	<p>For the higher marks in the band, learners have made justified and relevant links between the roles and changes with consideration to ethics. Technical terminology is used frequently with few inaccuracies.</p>		
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