Level 3 Technicals in Animal Management – 0172-541/041 (Wildlife)

Underline essential technical terms to be seen in the answer

Embolden **and, not** or **or** within the answer to clarify requirements for the mark,

Use brackets to indicate text that is extraneous for the mark (but supports examiner understanding)

Use slash to separate alternative/equivalent acceptable terms within an answer

Standard wording:

*Do **not** accept..... (Expected responses that are incorrect but close)*

*Answer must focus on..... and **not**..... (Clarification of the required focus/ clarifies boundary between acceptable and unacceptable – word 'focus' can be replaced as appropriate – capture, explain, elicit, highlight etc)*

Allow..... (Answers that may be on the boundary of acceptable – elaborate to clarify if necessary – usually added at standardisation)

Q	Acceptable answer(s)	Guidance	Max mks	Ref
1a	1 mark for any of the following, maximum of 1 mark. • Water vapour (H2O) • Methane (CH4) • Nitrous oxide (N2O) • Ozone (O3) • Chlorofluorocarbons (CFCs)		**1**	**308 1.1 AO1**
1b	1 mark for any of the following, maximum of 4 marks. • Carbon dioxide (CO_2) increases in the atmosphere (1) causing the ocean to absorb more carbon dioxide (1) • Carbon dioxide reduces the pH of sea water (ocean) (1) leading to acidification (1) • Acidic water dissolves calcium shell of invertebrates (1)		**4**	**308 1.3 AO2**

2	1 mark for any of the following, maximum of 2 marks. • Seasonal decrease in food (1) lack of food could lead to decrease (1) • Growth (1) too much competition will eventually cause growth stop (1) • Dissolution (1) the population gradually decreases to a point of no return (1) • Dispersal (1) due to lack of resources the population spreads out too far (1) • Genetic variability (1) lack of variability means the population are more susceptible to disease or deformities (1) • Fecundity (1) is new growth so populations grow due to quick expanse (1) • Natality (1) birth to death rate, if one is higher than the other the population will either increase or decrease (1) • Mortality (1) can cause stochastic population changes e.g earthquake could decrease specific areas (1)		**2**	**308 1.2** **AO2**
3a	1 mark for any of the following, maximum of 1 mark. • To provide (scientific) information on the status (1) trends (1) threats (1) to a species (1) • To inform action on biodiversity conservation (1) • To influence national (1) and international policy (1) and decision-making (1) Any other appropriate response.		**1**	**308 2.2** **AO1**
3b	1 mark for each species listed on the IUCN's 'Red List', maximum of 2 marks. • Leatherback turtle (1) • Sumatran elephant (1) • Mountain Gorilla (1) • Orangutan (1) Any other appropriate response.		**2**	**308 2.2** **AO1**
4	1 mark for any of the following, maximum of 3 marks: **Positive impacts:** Provides access to the countryside for the general public (1) provides an opportunity for (informal) recreation (1) provides an opportunity to inform/educate on conservation/environment (1) supports the rural economy (1) and cultural heritage (1) Any other appropriate response.		**3**	**308 2.1** **AO2**
5a	1 mark for any of the following, maximum of 2 marks. **Problems with imprinting:** • Have to train bird to eat/fly/swim (1) • Cannot release animal into wild (1)		**2**	**309 2.2** **AO1**

	• Natural behaviours may need to be stimulated (1) • May not want to breed/mix with own kind (1)			
5b	1 mark for any of the following, maximum of 2 marks. **Barrier nursing techniques:** • Contact with humans should be minimised at all times (1) • Hand feeding with a puppet or mask (1) • Fledglings should be returned to wild parents whenever possible (1) • Orphans should be fostered to a suitable receptive captive animal of the same species (1)		**2**	**309 2.2** **AO1**
6	1 mark for each weakness, maximum of 2 marks. • no immigration/no deaths/births/emigration if any of these occur it invalidates the survey (1) • failure to catch marked individuals (1) results in inability to recount population (1) • only an estimated result (1) • weather dependent (1) Any other appropriate response.		**2**	**309 1.1** **AO2**
7a	1 mark for any of the following, maximum of 4 marks. • Cull (1) shoot (1) poison (1) • Sterilisation (1) • Relocation of individuals to other areas/islands (1)		**4**	**309 4.3** **AO2**
7b	1 mark for any of the following, maximum of 6 marks. • Initially the wolf population will increase (1) as population is dependent on food availability (1) initially there will be many deer (1) • The wolf population will then start to decrease (1) as food resources diminish (1) deer may become harder to catch as they become fearful of predators (1) and deer learn how to avoid the wolves (1) • The wolf population will increase again over time (1) as the deer population begins to increase again as a result of fewer predators (1) Any other appropriate response.		**6**	**309 4.3** **AO2**
8	1 mark for any of the following, maximum of 2 marks. • high numbers of offspring (1) • high mortality rates (1) • no parental care (1)		**2**	**328 1.2** **AO1**
9	1 mark for any of the following, maximum of 2 marks. • To avoid bias (1)		**2**	**328 3.3** **AO2**

	• Data representative (1) • Allows use of statistical tests/named statistical test (1)			

10	1 mark for any of the following, maximum of 6 marks. • Eggs need to be incubated (1) one bird brings food for the other (1) take turns incubating to feed (1) • Food can be supplied more quickly to chicks by two adults (1) • Survival of offspring increases (1) due to parental care being shared (1) Any other appropriate response.		**6**	**328 1.1** **AO2**
11a	1 mark for the following response, maximum of 1 mark. (Habitat) fragmentation (1)		**1**	**328 2.2** **AO1**
11b	1 mark for any of the following, maximum of 2 marks. • Reduced habitat size (1) • Prevents migration (1) movement of species (1) • Animals unable to find a mate (1) reproduce (1) • Increased predation in exposed areas (1) • Increased roadkill (1) • Greater chance of genetic drift (1) • Decrease of resources (1)		**2**	**328 2.2** **AO2**
12	1 mark for any of the following, maximum of 3 marks. • Public sector is owned/managed by State/Government (1) • Public sector purpose is to serve citizens (1) • Public sector is financed by taxes etc.(1) Any other appropriate response.		**3**	**364 1.2** **AO1**
13	1 mark for any of the following, maximum of 3 marks. • Correct amount of stock at right time (1) • Allows maximum sales (1) as products aren't 'out of stock' (1) • Reduces waste (1) • Ensures capital is not tied up unnecessarily (1) • Helps with tax returns (1) by preventing over/under payment (1) Any other appropriate response.		**3**	**364 4.1** **AO2**

14	**Band 1:** 1-4 marks The candidate demonstrated a basic understanding of the reasons why the animal could be suffering from malnutrition. The candidate briefly described rehabilitation and release of the animal. Technical terminology is used infrequently or inaccurately. To access the higher marks within the band, the candidate will have attempted to make justify their suggestions for rehabilitation and release, but these may not all be valid. **Band 2:** 5-8 marks The candidate demonstrated a detailed understanding of why the animal could be suffering from malnutrition. Some gaps in knowledge being evident, but a good understanding of the rehabilitation and release requirements of the animal were shown. Technical terminology is used frequently and mostly accurately. Relevant legislation is clearly linked to rescue and release. To access the higher marks within the band, the candidate discussed release strategies with some gaps in knowledge. **Band 3:** 9-12 marks The candidate demonstrated a comprehensive understanding of why the animal could be suffering from malnutrition. Key points in relation to what needs to happen to the animal in captivity were coherently discussed with a reasoned release strategy linked to relevant legislation. Technical terminology is used frequently and accurately in context. To access the higher marks within the band, the candidate suggested a range of post release monitoring methods and provided justifications for their suggestions throughout. For no awardable content, award 0 marks.	**Indicative content:** • Causes for malnutrition in animals • Reasons for population decline – habitat destruction • National conservation strategies • Rehabilitation plan including relevant legislation	**12**	**(308) 2.1** **(309) 2.2** **(328) 1.3** **AO4**