**Year 9 Ecosystems Marking key**

**Multiple choice**

**Short answer**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | a | b | xxxx | d |
| **2** | a | xxx | c | d |
| **3** | a | b | xxx | d |
| **4** | a | xxxx | c | d |
| **5** | xxx | b | c | d |
| **6** | a | xxx | c | d |

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| **Question 1a** | **6 Marks** |
| List some of the biotic and abiotic factors that can affect Desmond’s estuary ecosystem  Abiotic   * Temperature water * Wind * Amount of Sunlight   Biotic   * Amount of catfish * Amount of squid * Amount of sea grass | 1 mark per correct answer  Max 3 each for biotic and abiotic |
| **Question 1b** | **5 marks** |
| State and describe the relationship between Desmond the dolphin and a tapeworm   * Parasitism * It is a symbiotic relationship (1) because it involved 2 different species (1) * Desmond the dolphin is harmed (1) and the tape worm benefits (1) | 1 mark  2 marks  2 marks |
| **Question 1c** | **7 marks** |
| Construct a labelled food web with at least two (2) producers, three (3) first-order consumers, Desmond, and a top consumer. | 0.5 mark for organism  0.5 marks for arrow in correct direction |
| **Question 1d** | **1 mark** |
| Include and label the source of energy for this ecosystem   * The Sun | 1 mark |
| **Question 1e** | **4 marks** |
| Compare and contrast the flow of energy and matter in a food web. You can use the food web you constructed as a reference.   * Energy flows in one direction * Matter and nutrients flows in a circle (cyclical, is recycled) * The amount of energy decreases through the chain * The number of atoms stay the same throughout the chain | 1 mark  1 mark  1 mark  1 mark |
| **Question 1f** | **2 marks** |
| Whales and sea birds both feed on krill. Describe this kind of relationship   * Competition * The two species are fighting (competing) for the same resource (food source) | 1 mark  1 mark |

**Long answer**

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| --- | --- |
| **Question 2** | **10 marks** |
| Nearby this forest, a new suburb is being built. Once families and their pets move in, both feral and domesticated cats disrupt this ecosystem by preying on all the birds.  Formulate a response that includes the following:   * 1. State the change that happened in this ecosystem   2. Describe the immediate effect that it may have on organisms   (HINT: you may want to draw a food chain to find out the organisms that have **direct** and **immediate** effect)   * 1. Predict the future impacts on the ecosystem * Change: * Urbanisation/urban sprawl/deforestation * Introduced species * Immediate effect: * Decreased number of birds * This directly impacts the lynx (0.5), insects (0.5), owl (0.5) and black spruce (0.5) populations * Lynx and owls will decrease (0.5) with loss of food source (0.5) * Insects and trees will increase (0.5) in number with less predation (0.5) * Future impacts: * Bird populations become extinct * Increases in number of moose and elk (0.5) because they have more black spruce to feed on (0.5) * Increase in number of mice (0.5) due to increase in food source (0,5)   Must connect idea with reason for full mark | 1 mark  1 mark  1 mark  total 2 marks  1 mark  1 mark  1 mark  1 mark  1 mark  (max 3) |