

Biology Election 2019 Mark Scheme

1.

(a) Sharks are fish because – *they have scales or fins or gills (1)*

Penguins are birds because – *they have feathers or beak (1)*

Dolphins are mammals because – *they produce milk only (1)*

(b) (i) or (ii) – streamline shape, bones/ backbone/ spine, flippers/ fins (2)

(c) (i) – Similar environment with the same pressures – live in water and hunt fish (2)

(ii) – evolution (convergent (2)) / mutations (1) , natural selection (2)

2.

Fat is a larger/ bigger/ molecule and has more energy (1), the same for glucose and amino acids (1).

Fat has more hydrogen/ bonds (1) than glucose and glucose has more hydrogen/ bonds than amino acids (1).

3.

(a) $6\text{CO}_2 + 6\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$ - 1 mark for each molecule in the right place.

(b) Magnesium is used by the plant to make Chlorophyll (1) for Photoynthesis (1)

4.

(a) The candle used up all the oxygen (1) so the mouse could not respire (1)

(b) The plant produced oxygen by photosynthesis (2) so the mouse could respire

(c) The mouse might live longer than in A but not as long as in B (explain in terms of photosynthesis and respiration and the production of oxygen v carbon dioxide.