Year 11 Biology, 2012 Semester Two Exam (ANSWERS)

Multiple Choice Section

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| C | A | C | D | B | D | B | C | C | D | B | C | D | A | B | A | C | B | B | D |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| D | C | B | D | B | C | B | C | B | A | B | C | A | A | D | D | C | B | A | A |

Short Answer Section

Question 1.

1. Apical Bud (1).
2. Auxin (1).
3. Substance X inhibits the growth of lateral buds (1) as pots C and D showed no lateral bud growth when applied to the cut OR when applied to the lateral buds (1).
4. Substance X can move from the apical buds to the lateral buds (1).

Question 2.

1. Photosynthesis : Reactants are carbon dioxide and water (1).

Products are glucose and oxygen (1).

Respiration: Reactants are glucose and oxygen (1).

Products are carbon dioxide and water (1).

1. Light OR enzymes (1).
2. Roots OR Inside a Stem OR Leaf Epidermis (1).

Question 3.

1. Any one of the following: (1) for indicating mode, (1) for indicating information conveyed.

Visual – gestures to show aggression

Visual – gestures to attract a mate

Vocal – calls to attract mates

Vocal – calls to alert others of the presence of predators

Vocal – calls to indicate the presence of food

1. Scavenger (1) as it feeds directly on dead organisms (1).
2. i. Trial and error learning (1) as ravens needed to modify their behaviour several times to succeed (1).

ii. Problem solving behaviour (1) as mature ravens examined the task for a short period of time before solving it (1).

Question 4.

1. i. Eight (1).

ii. Two (1).

iii. Any two of the following (2).

* Shape of face (heart shape versus hawk –like).
* Presence/absence of comb-like structure on foot for preening.
* Eye colour

iv. No (1). The information states that there are two families so each genus must belong to a different family (1).

|  |  |  |
| --- | --- | --- |
| Species | Eye Colour | Shape of Face |
| *Tyto tenebricosa* | Dark Brown (1) | Heart-shaped (1) |
| *Ninox rufa* | X (1) | Hawk-like (1) |

1. Cutting down old trees for timber which will reduce the available nesting sites for powerful owls OR any other reasonable suggestion (1).

Question 5.

1. The catfish is a bottom feeder (1) as its mouth points downwards OR it possesses whiskers for foraging in the mud (1).
2. Having scales pointing towards the tail makes the fish more streamlined when it moves through water (1).

|  |  |  |  |
| --- | --- | --- | --- |
| **System** | **Relative Speed of System**  **(*Fast or Slow*)** | **Example of Organ**  **from System** | **Duration of Response**  **(*Long or Short*)** |
| **Endocrine**  **System** | **Slow ( ½ )** | **Pancreas, adrenal gland etc ( ½ )** | **Long ( ½ )** |
| **Nervous**  **System** | **Fast ( ½ )** | **Brain, spinal cord ( ½ )** | **Short ( ½ )** |

Question 6.

1. Carbon cycle (1).
2. A- Photosynthesis ( ½ ).

B- Respiration ( ½ ).

C- Consuming or Eating or Feeding ( ½ ).

D- Combustion or Burning of Fossil Fuels ( ½ ).

1. No (1). The total amount of carbon has not changed since all matter is recycled (1).

(*The proportion of carbon in different parts of the cycle has changed but not the total amount of carbon*).

1. Twelve arrows should be present for full marks (4).

(*Half mark off for each error*)

Dragonfly Nymphs

Mosquito Fish

Water Striders

Mosquito Larvae

Water Snails

Midge Larvae

Diatoms

Detritus

Green Plants

Question 7.

1. Condors would be placed at the top of the food chain (1).
2. Any two of the following (2).

* Habitat destruction
* Use of pesticides
* Shooting
* Competition for food sources.

1. 1. Soaring to several thousand feet allows to condor to reach the cooler air at these altitudes (1).

2. When the water in the urine evaporates, it takes heat from the body (1).