

Biology 4.1 Foundation Mark scheme

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|--------|---|------------|
| 1. (a) | Earthworm – invertebrate Fern – non-flowering plant Fox – vertebrate Dandelion – flowering plant Algae – microorganism 4 or 5 = 4 marks;;; 3 = 3 marks 2 = 2 marks 1 = 1 mark | 4 |
| (b) | Presence of {backbone/ spine} in vertebrates (or converse); Must be clear reference to vertebrates/ invertebrates | 1 |
| (c) | Bacteria / virus / fungi/ yeast; NOT named species/ plant plankton/ mould | 1 |
| (d) | Scientific name is always the same / common names different/ scientific name is the {same all over the world/ universal}/ scientific names are the same in <u>all</u> languages; | 1 |
| | Question total | [7] |

| | | MARKS |
|----|--|--------------|
| 2. | (a) Turtle dove + <u>greatest</u> decrease/ decreased the most/ highest decrease; | 1 |
| | (b) 1040; | 1 |
| | (c) (i) Turtle dove/ Grey Partridge; | 1 |
| | (ii) Pied Flycatcher/ Cuckoo; | 1 |
| | (d) Decrease + {fewer/ less} species/ less biodiversity/ species die out/ fewer bird species; NOT fewer birds/ not many species | 1 |

Question Total [5]

3. (a) Animal; [4]
Mammal;
Alopex;
lagopus;
- (b) *White hair*: Idea of camouflage/ blending in/ match [3]
environment;
NOT hide/ disguise
Thick hair: Insulation/ traps (warm) layer of air/ keeps heat in/
let out less body heat;
NOT keep it warm/ so it doesn't get cold
Small ears: Idea of reduced surface area/ {reduces/ less} heat
loss;
NOT stop heat escaping/ no heat loss/ keeps heat in (can be
neutral if used with reduced surface area)
- (c) Universal/ unique/ unchanging/ they all use the same name/
same in all languages/ international/ common name is
different in different languages; [1]

Question Total [8]

4. (a) Place the quadrats randomly within the sample area; 1
- (b) (i) Mean = 6.2; 1
- (ii) Estimated no of lugworms = 6.2×3200 ; 2
= 19 840;
Allow ECF from (b)(i)
(If answer is correct award 2 marks directly)
- (c) Any ref to evidence not available on surface (to count)/hidden by 1
grass/ {casts/holes/burrows} are hidden by the grass/
earthworms move/ earthworms do not stay in one burrow/
Accept ref to 3D aspect of population of earthworms ie there can
be many earthworms at the same vertical point in the soil;

Question 8/3 total

[5]

| | | | | | | | | | |
|-----------------------------|---|---|-----------------------------|---|---|---------------------------|---|---|--|
| 5 | (a) | Biological (control); Accept bio control | 1 | | | | | | |
| | (b) | <table border="0" style="width: 100%;"> <tr> <td style="width: 30%; vertical-align: top;">(i) <i>No mites present</i></td> <td style="vertical-align: top;">July 380; (reject 380cm²)</td> <td style="vertical-align: top; text-align: right;">2</td> </tr> <tr> <td style="vertical-align: top;"><i>With mites present</i></td> <td style="vertical-align: top;">June 200; (reject 200cm²)</td> <td></td> </tr> </table> | (i) <i>No mites present</i> | July 380; (reject 380cm ²) | 2 | <i>With mites present</i> | June 200; (reject 200cm ²) | | |
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| <i>With mites present</i> | June 200; (reject 200cm ²) | | | | | | | | |
| | (ii) | Reduces/decreases; | 1 | | | | | | |
| | (iii) | August – <u>greatest</u> difference in number/OWTTE; | 1 | | | | | | |
| | (c) | <table border="0" style="width: 100%;"> <tr> <td style="width: 30%; vertical-align: top;">(i)</td> <td style="vertical-align: top;">Check whether it {affects/causes} {disease/damage} to {<u>other organisms/ tomatoes</u>} / does not become a pest itself; NOT disease unqualified/causes disease to humans</td> <td style="vertical-align: top; text-align: right;">1</td> </tr> <tr> <td style="vertical-align: top;">(ii)</td> <td style="vertical-align: top;">Further work – need for repetition/check for repeatability/do it {again/ multiple times/three times}; NOT reproducibility Q <i>refers to same scientists</i></td> <td style="vertical-align: top; text-align: right;">1</td> </tr> </table> | (i) | Check whether it {affects/causes} {disease/damage} to { <u>other organisms/ tomatoes</u> } / does not become a pest itself; NOT disease unqualified/causes disease to humans | 1 | (ii) | Further work – need for repetition/check for repeatability/do it {again/ multiple times/three times}; NOT reproducibility Q <i>refers to same scientists</i> | 1 | |
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| | | Question 5 Total | [7] | | | | | | |