Biology unit 7 homework – Ecology

For each of the questions below: -

Highlight the command word if there is one & annotate what the command word means. - Answer the question!

Q1. This question is about ecology.

(a) Give **two** abiotic (non-living) factors which will affect the growth of plants on a school playing field.

Give a reason why each factor will affect the growth of the plants.

Abiotic factor 1 _____

Reason _____

_____

Abiotic factor 2 _____

Reason _____

_____

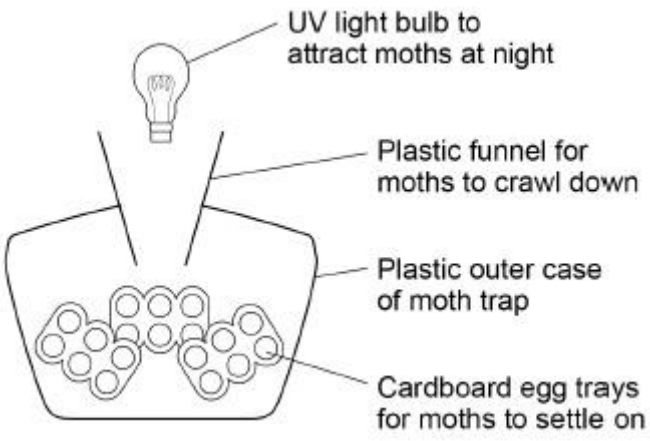
(4)

Students were studying the ecology of their playing field.

They wanted to count the population of ruby tiger moths.

Figure 1 shows the moth trap they used.

Figure 1



This is the method used.

1. Set up the moth trap on the playing field.
2. Leave the trap for several days with the light on.
3. Take the trap to the laboratory and carefully remove the egg trays.
4. Count the number of ruby tiger moths.
5. Release the moths on the playing field.

(b) The students needed other equipment to identify the ruby tiger moths.

What **two** other pieces of equipment did the students need?

Tick **two** boxes.

Electron microscope	☐
Hand lens	☐
Moth guide	☐
Quadrat	☐
Tape measure	☐

(2)

(c) Suggest **one** reason why the moths were counted in the laboratory.

_____

(1)

(d) Suggest **one** hazard in using the moth trap.

_____

(1)

(e) What precaution should the students take to minimise the hazard you suggested in part (d)?

_____

(1)

Figure 2 shows a caterpillar of the ruby tiger moth.

The head is sometimes bright orange in colour or there is a red stripe on the back.

Figure 2

(f) Give **one** reason why caterpillars of the ruby tiger moth have very few predators.

_____

_____

(1)

2) Some animals are adapted to survive in very cold conditions such as the Arctic.

Explain how the adaptations of Arctic animals help them to survive in cold conditions.

(Total 6 marks)

3) Students used quadrats to estimate the population of dandelion plants on a field.

(a) Describe how quadrats should be used to estimate the number of dandelion plants in a field.

(4)

(b) The field measured 40 m by 145 m.

The students used 0.25 m^2 quadrats.

The students found a mean of 0.42 dandelions per quadrat.

Estimate the population of dandelions on the field.

_____

_____

Estimated population of dandelions = _____

(2)

(c) In one area of the field there is a lot of grass growing in the same area as dandelions.

Suggest why the dandelions may **not** grow well in this area.

_____

_____

_____

_____

_____

(4)

4) Global warming may reduce biodiversity in some areas.

(a) What is biodiversity?

_____

_____

(1)

(b) State two gases that cause global warming?

_____

(2)

(c) Give **two** effects of global warming that could reduce biodiversity in an area.

1. _____

_____

2. _____

_____

(2)