Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

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 _____

_____

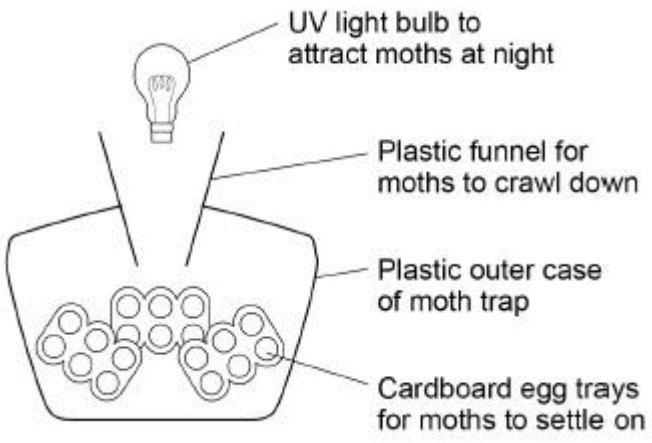
(4)

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.

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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

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

_____

_____

(1)

(Total 10 marks)

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Q2.

Respiration can happen aerobically or anaerobically.

Respiration transfers energy from glucose.

(a) Draw **one** line from each type of respiration in human cells to the correct information.

Type of respiration in human cells	**Information**
	Produces ethanol
Aerobic respiration	Uses oxygen
Anaerobic respiration	Uses carbon dioxide
	Produces lactic acid

(2)

(b) The table below shows the amount of energy released by aerobic and anaerobic respiration.

	Energy in kJ transferred from 1 g of glucose
Aerobic respiration	16.1
Anaerobic respiration	1.2

Suggest why human cells might respire anaerobically, even though only a small amount of energy is transferred.

_____

_____

(1)

(c) Yeast is used in the brewing and baking industries.

Why is yeast used in these industries?

_____

_____

_____

_____

_____

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_____

_____

_____

(4)

(Total 7 marks)

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