Mr. Cummins **Ecology** 81 marks

Name: _____

Q.1

(a) (i) Distinguish between a food chain and a food web.
Include a clear reference to each in your answer.

(ii) What do ecologists mean by a *pyramid of numbers*? **(9)**

(b) Organisms that are introduced into new environments outside their natural ranges are referred to as exotic species. In some cases these introductions have been deliberate and in other cases accidental e.g. when a species kept in captivity in a new country escapes and gives rise to a wild population. Worldwide, the great majority of deliberate attempted introductions have been unsuccessful.

(i) Suggest a reason for attempting to establish an exotic species in a new country.

(ii) Suggest **two** reasons why the great majority of attempted introductions have been unsuccessful.

(iii) Use your knowledge of the life cycle of flowering plants to suggest how an exotic plant may escape from captivity.

(iv) Use the knowledge that you have gained in your studies of ecology to suggest how the introduction of an exotic species may:
1. impact negatively on an existing community.
2. impact positively on an existing community.

(v) It has been stated that an exotic species has a good chance of becoming established in a new environment if there is a vacant niche.
1. Explain the term *niche* in this context.
2. Do you agree with the above statement?
3. Explain your answer. **(27)**

(c) **Name the ecosystem** which you investigated during your study of ecology.

(i) Explain the terms
1. *Flora,*
2. *Fauna.*

(ii) Name **one** animal from your named ecosystem **and** describe how you carried out a quantitative study of that animal.

(iii) Suggest **one** way in which marking an animal might endanger it.

(iv) Ecosystems are subject to changes, both natural and artificial.
Mention **one** of **each** type of change as it applies to your named ecosystem. **(24)**

Q.2

(i) What is meant by *pollution*?

_____

(ii) Name **one** human activity that causes pollution.

_____

(iii) State **two** problems associated with waste disposal in Ireland.

Problem 1. _____

Problem 2. _____

(iv) List **two** ways of minimising waste.

1._____

2._____

(v) Give **one** example of the use of microorganisms in waste management.

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