

4 Biodiversity is an important aspect of conservation.

(a) Biodiversity can be measured by investigating species richness.

Explain what is meant by the term **species richness**.

(2)

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(b) Biologists studied the effects of public footpaths on biodiversity in chalk grassland.
 They recorded the presence (✓) or absence (×) of six species of plants on a public footpath across chalk grassland.
 They also studied an area of undisturbed chalk grassland with no public access.
 The results are shown in the table below.

Plant species	Public footpath across chalk grassland	Undisturbed chalk grassland
Agrimony	×	✓
Bird's-foot trefoil	×	✓
Cow parsley	×	✓
Dandelion	✓	✓
Fragrant orchid	×	✓
Ribwort plantain	✓	✓

(i) Using information from the table, suggest possible long-term effects on chalk grassland of public access. (2)

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(ii) The fragrant orchid is a rare species. It shows high genetic diversity.
 Explain what is meant by the term **genetic diversity**. (2)

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(c) Seedbanks are important for the long-term conservation of rare plant species.

(i) Suggest and explain why it is better to store seeds, rather than keeping fully grown plants, for the long-term conservation of rare plant species.

(3)

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(ii) In seedbanks, dried seeds are stored at low temperatures and in a dry atmosphere.

Suggest why these conditions are needed for seed storage.

(3)

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(Total for Question 4 = 12 marks)

