

2025 Bi H1 Q24

Section: Sustainability and Interdependence

Topic: Biodiversity

Question Summary:

The question lists three components of biodiversity:

1. Number of different species in an ecosystem
2. Number and frequency of alleles in each species in an ecosystem
3. Proportion of each species in an ecosystem

You are asked which components must be considered when measuring **species diversity**.

Worked Solution:

Species diversity focuses on diversity at the level of species within a community. It depends on two main ideas:

- **Species richness**: the number of different species present (component 1).
- **Relative abundance**: the proportion of each species in the community (component 3).

Component 2 refers to the **number and frequency of alleles** within each species. This is a measure of **genetic diversity**, not species diversity.

Therefore, measuring species diversity requires:

- Component 1 (number of different species)
- Component 3 (proportion of each species)

This corresponds to option **B (1 and 3 only)**.

Final Answer: B (1 and 3 only).

Revision Tips:

- **Biodiversity** has three levels: genetic diversity, species diversity and ecosystem diversity.
- **Species diversity** uses species richness and relative abundance.
- **Genetic diversity** is about the number and frequency of alleles within a species.
- Read questions carefully to see which level of biodiversity they are asking about.