

Conservation of biodiversity: practice questions

8 questions • 23 marks • mark scheme at the back

For IB Diploma Biology, Standard Level and Higher Level (first assessment 2025). **HL only** is additional higher level content, for HL students only.

Name

Total / 23

1 PAPER 1A STYLE

[1 mark]

Which is an example of genetic diversity?

- A. ☐ A reef with many species of coral
- B. ☐ A coastline with mangroves, seagrass beds and coral reefs
- C. ☐ A woodland in which one species of tree is far more common than the others
- D. ☐ Many varieties of rice with different alleles for grain size

2 PAPER 1A STYLE

[1 mark]

Which species would the EDGE of Existence programme give the highest priority?

- A. ☐ A critically endangered species with many close living relatives
- B. ☐ A critically endangered species that is the only living member of its family
- C. ☐ A species of least concern that is the only living member of its family
- D. ☐ A common species that is important to the local economy

Volunteers and scientists surveyed the birds of a wetland in 2004 and repeated the survey in 2024, using the same method at the same sites. The table shows the number of each species counted (data for practice). (a) State the species richness in 2004 and in 2024. [1] (b) Calculate the percentage change in the total number of birds counted between 2004 and 2024. [2] (c) Deduce how species evenness changed between 2004 and 2024. [1] (d) Suggest one concern about using data recorded by volunteer (citizen) scientists. [1]

Birds counted on a wetland survey (data for practice)		
Species	2004	2024
A	12	10
B	18	15
C	25	48
D	30	0
E	6	2
F	9	0
Total	100	75

Answer =

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Outline the causes of the extinction of the North Island giant moa (*Dinornis novaezealandiae*) and the Caribbean monk seal (*Neomonachus tropicalis*).

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[3 marks]

[illegible]

[2 marks]

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[2 marks]

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[6 marks]

[illegible]

Mark scheme

One mark for each point unless a maximum is given. Words in brackets are not needed for the mark.

1. [1]

D D; [1]

2. [1]

B B; [1]

3. [5]

- (a) 6 (in 2004) and 4 (in 2024); [1] Both required.
- (b) change = $75 - 100 = -25$ / $(75 - 100) \div 100 \times 100$; [1]
- (b) -25 % / a decrease of 25 %; [1] ECF from working
- (c) evenness decreased because species C now dominates / makes up most of the birds (48 of 75); [1]
- (d) species may be misidentified / observers vary in skill or effort / records may be biased towards accessible sites; [1] OWTTE

4. [3]

- moa: hunted by human settlers (for meat) / eggs collected; [1]
- moa: forest habitat burned / cleared; [1]
- moa: slow breeding / no fear of land predators so populations could not recover; [1]
- monk seal: hunted for oil from blubber / meat / skins; [1]
- monk seal: overfishing reduced its food / disturbance of resting beaches; [1]
- max 3. At least one cause for each species is needed for full marks.

5. [3]

- logging for (valuable) hardwood timber; [1]
- clearance of land for oil palm plantations; [1]
- clearance for other crops, e.g. rubber / pulpwood; [1]
- fires used to clear land, spreading in drought / on drained peat; [1]
- roads / mining open up forest and fragment it; [1]
- max 3

6. [2]

- fossil evidence suggests more species are alive now than at any time in the past; [1]
- many species have not yet been discovered / described, so the total is only estimated; [1]
- species counts depend on how species are classified / splitters and lumpers; [1]
- max 2

7. [2]

- transports pests / diseases / invasive alien species to new areas; [1]
- native species have no defences / evolved adaptations against them, so are outcompeted / eaten / infected; [1]
- named example, e.g. chytrid fungus in amphibians / brown tree snake on Guam; [1]
- max 2

8. [6]

- no single approach is sufficient / different species need different measures; [1]
- in situ conservation protects species in their natural habitat; [1]
- in situ keeps species interacting with their community / evolving naturally; [1]
- nature reserves need active management, e.g. control of invasive species / anti-poaching / managing grazing; [1]
- rewilding reintroduces lost species to restore natural processes, e.g. wolves in Yellowstone; [1]
- reclamation restores degraded ecosystems, e.g. replanting mangroves; [1]
- ex situ conservation in zoos allows captive breeding when wild numbers are very low; [1]
- captive-bred animals can be reintroduced, e.g. Arabian oryx; [1]
- but captive populations are small with low genetic diversity / habitat may still be lost; [1]
- botanic gardens and seed / tissue banks store germ plasm / genetic diversity of plants; [1]
- seed banks are cheap and compact but seeds are kept out of their ecosystem / do not evolve; [1]
- max 6