

thebiotutor

Unit F212: Molecules, biodiversity, food and health

Module 2.3 Biodiversity

Answers

1. (a) number of different species present/AW; 1
- (b) (i) 0.62;;
award one mark if working correct but answer wrong 2
- (ii) award marks only if comparative points given
hedge vegetation has greater species richness than wheat;
numbers of insects under hedge more evenly spread compared with
numbers in wheat field / AW;
more niches for insects in vegetation under hedge/ more species of
plants grow under hedge than in wheat field/ AW;
ref. use of, chemicals/ insecticides/herbicides, on wheat and not
on hedge vegetation;
AVP; e.g. ref. plants under hedge more likely to be wild/native
compared with wheat crop / AW max
3
- (c) Any four from the following:
ref. random samples;
sweep net;
repeats in each habitat;
ref need for same technique in each habitat;
classify and count numbers of each species(of insect) caught;
AVP; e.g. further detail of sampling such as use of suitable chemical to
stun the insects; max
5
- [11]
2. 1 establish study area either with strips and with no strips;
2 (line or belt) / transect / random sampling / field walk;
3 use quadrats;
4 at regular intervals / random coordinates;
5 appropriate size of quadrat;
6 identification of plant species / ref to use of keys;
7 record presence / absence;
8 % frequency / % cover;
9 biodiversity index e.g. Simpson's diversity index;
10 Braun-Blanquet scale / ACFOR / DOMIN;
11 AVP; e.g. seed and pollen traps max
5
- [5]

3. *Management problems*

- 1 capture of species/AW;
- 2 numbers of species caught ref to extinction;
- 3 ref to named example e.g. elephants;
- 4 maintenance of genetic variability/gene pool;
- 5 ref to funding;
- 6 ref to species ownership/AW;
- 7 problems of storage and maintenance;
- 8 ref to specific example of problem; e.g. inbreeding/altered breeding/seed preparation;
- 9 AVP;

Need for success

- 10 stop extinction/maintain gene pool;
- 11 potential medical benefits;
- 12 agricultural benefits/artificial selection;
- 13 named example of crop improvement;
- 14 ethical/moral responsibility for future generations;
- 15 AVP; 3 max max 7

QWC - legible text with accurate spelling, punctuation and grammar 1

[8]

4. a species threatened with extinction / AW;
 man-made or natural changes in their environment /AW;
A hunting and poaching
 numbers, reduced to a critical level / so low that reproduction affected /
 AW; **A** only small numbers left max 2

[2]