

Biology 1 Higher Mark Scheme

1. (a) Mean catch/ mass caught increased; 2
{Number/ percentage} of young fish/ two year old fish} caught increased/ {number/ percentage} of {older fish/ 4-9 year old fish} caught decreased;
- (b) Larger mesh size means smaller/ younger fish are not 3
{caught/escape}/ smaller fish thrown back;
young fish survive to {grow/ reach breeding age}/ young fish grow to 3-4 years of age;
So would {breed/ reproduce};
(third marking point cannot be given alone)
- (c) {Reduce/ limit} the {quota/ size of catch/ mass of fish}/ 1
Restrict {days/ time} fishing boats can be used/ reduce {surface area/ size} of net/ reduce length of fishing season/ introduce no fishing;
- (d) Any two from 2
Reference to less employment;
Less fish sold/ reference to money;
reduction of other species because cod is a predator/ cod eat other commercially important species;
cost of buying new nets or equipment;

Question 6 total

[8]

2. (a) Place the quadrats randomly within the sample area; 1
- (b) (i) Mean = 6.2; 1
- (ii) Estimated no of lugworms = 6.2×3200 ; 2
= 19 840;
Allow ECF from (b)(i)
(If answer is correct award 2 marks directly)
- (c) Any ref to evidence not available on surface (to count)/hidden by 1
grass/ {casts/holes/burrows} are hidden by the grass/
earthworms move/ earthworms do not stay in one burrow/
Accept ref to 3D aspect of population of earthworms ie there can
be many earthworms at the same vertical point in the soil;

Question 8/3 total [5]

3. (a) When the predatory mite reaches 500/ 1 week after introduction/ at 2
week 5/ between weeks 5 and 6 ;
It kills off/ causes a decline in the red spider mite.
- (b) Biological control accept biocontrol 1
- (c) It may start eating other (harmless/ non pest species/) insects/ 1
species/ non target species (not enough to say it may become a
pest itself).
NOT start eating the fruit

Question total [4]

4. (a) (i) $P = \frac{56 \times 48}{16} = 168$; 2
Method (1) Answer (1)
- (b) Repeat the exercise/ take {more/ larger} samples; NOT take larger sample area. 1
- (c) They are balanced/ the same/ equal/ they don't happen; 1
- (d) Could eat them/ could be predators; 3
Could compete for food/ eat their food/ compete for breeding space;
Could introduce disease;
(in fact *Astacus fluviatilis*, the American red clawed crayfish, has introduced a fungal parasite)

Question Total [7]