

Evolution of Species Marking Scheme

12. (a)	<ul style="list-style-type: none"> • Initial population is separated / split (or idea of this) 1 • (Different) mutations occur in each subpopulation/ group (need indication that it is more than the original one population) 1 • Some mutations are advantageous 1 • Natural selection occurs OR selection pressures are different in each group OR advantageous mutations are selected for 1 • Subpopulations / groups are no longer able to interbreed to produce fertile offspring 1 <p>Any two from last three bullet points</p>	4	
(b)	<p>Mutation - a (random) change to genetic material/chromosome structure or number/bases in DNA</p> <p>Species - organisms which can interbreed/reproduce to produce fertile offspring</p>	1	
(c)	<p>Allows population to adapt to changing environmental conditions OR suitable example of coping with change OR makes it possible for population to evolve in response to changing conditions</p>	1	Not Acceptable - answers which are about 'if they are all same'

16.	B	
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17.

C

(b)		Radiation or example/Chemicals or example/High temperature	1	Only one answer required. Must be high temperature, not low or temperature on its own.
(c)		<ul style="list-style-type: none"> (Allows the species) to evolve/adapt in response to changing environmental conditions 	1	Both parts required.

18

A

13.	(a)		Mutation	1	
	(b)	(i)	Different numbers released/marked/captured OR to compare results	1	Not acceptable: different numbers recaptured.
		(ii)	Fewer were eaten (by predators/birds)/ better camouflaged so not eaten/camouflaged from predators/birds less likely to be eaten/seen by predators or birds/more dark moths eaten by predators or birds	1	Must have reference to being eaten or predators/birds. Must be comparative.
		(iii)	Natural selection/survival of the fittest	1	'Evolution' not acceptable

12.	(a)		Niche	1	
	(b)		Mutation	1	
	(c)		(Offspring would be) infertile/sterile	1	Not acceptable - offspring are unable to reproduce, but not negating

13.

3

<i>Statement</i>	<i>True</i>	<i>False</i>	<i>Correction</i>
Genetic variation within a population allows the population to <u>adapt</u> in a changing environment.	✓		
Isolation barriers can be geographical, <u>environmental</u> or reproductive.		✓	Ecological
Sub-populations evolve until they become genetically <u>identical</u> .		✓	Non-identical/varied/ different

22.

B

1

23.

A

1