

# Evolution 3

## QUESTION 1

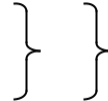
QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	any four from:  ✗ mutation produced a bird whose bill was crossed ✗ birds compete for food / seeds ✗ mutant crossbill able to obtain food faster / easier / more successfully ✗ selected for or more likely to survive ✗ reproduce / mate / breed / produce offspring	max two marks for a Lamarck explanation do not allow birds decide to mutate	4
Total marks			4

## QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	predation / eaten	ignore competition	1
b)	could run faster / jump higher / climb better to escape / or escape describe		1 1
c)i)	natural selection		1
c)ii)	Darwin		1
Total marks			5

## QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	variation / range of leg sizes / mutation ones with longer legs could feed in deeper water / get more food or long legged ones less likely to get feathers wet or long-legged ones could escape	do not allow intention to mutate  allow reverse argument	1  1



	from leopards survive / breed / pass on genes	allow characteristics passed onto next generation	1
b)	flamingos stretched their legs (to be able to feed in deeper water/ keep feathers dry / escape from leopards)  longer legs / acquired characteristic inherited by offspring	It must be clear that the characteristic develops during the organisms lifetime ie it is not inherited from parents accept long legs are an acquired characteristic accept (acquired) genes for long legs passed on	1  1
Total marks			5

#### QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	warmer / dryer	allow greenhouse effect / global warming ignore wind	1
b)i)	genes / alleles / chromosomes / DNA / genetic material / genetics	allow inheritance allow nutrition / food / metabolism  / growth rate  ignore environment	1
b)ii)	natural selection / evolution	allow survival of the fittest	1
Total marks			3

#### QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	Lamarck	ignore any first name(s)	1
b)i)	variation / range of sword lengths (in ancestors) those with long swords get more food swordfish (with long swords) survive and breed (survivors) pass on gene(s) / allele(s) (for long sword)	accept mutation produced longer sword accept those with short swords get less food allow have offspring for breed  allow mutation for gene(s) / allele(s)	1  1  1
b)ii)	any one from: • more evidence (now)  • DNA / genes / mechanism of inheritance discovered	accept examples of evidence, e.g. more fossils   allow Lamarck's theory has been	1

		disproved ignore religious arguments ignore proof	
Total marks			6

### QUESTION 6

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	volume) increases (with time)	ignore numbers	1
a)ii)	there is more evidence / specimens / results (for Homo sapiens)	allow examples of this, eg more / better fossils  allow converse if clearly referring to Australopithecus ignore reference to being 'more recent'	1
b)i)	2.5 - 3.15 (million years ago)	accept any number in range	1
b)ii)	Darwin		1
c)	any one from: •they believed in other theories •insufficient evidence •no proof •genes / mechanism of inheritance not known / discovered	allow they believe that God made all life  ignore 'no evidence' allow not enough proof	1
Total marks			5

### QUESTION 7

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	variation (in population) / mutation longer nosed individuals get more  food / leaves (these) survivors breed (more)  pass on genes / alleles / DNA (for long nose)	allow longer nosed individuals  more likely to survive  allow pass on mutation	1  1  1
a)ii)	Phiomia / ancestor stretched its nose (during its lifetime) to reach food / leaves  passed on (stretched nose) to	allow offspring inherit (stretched nose) do not allow ref to genes	1  1

	offspring		
b)i)	insufficient evidence / no proof mechanism of inheritance not known	ignore other theories, eg religion do not allow no evidence allow genes / DNA not discovered	1 1
b)ii)	God made all living things / them	allow creationism ignore religion	1
Total marks			9

### QUESTION 8

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	selection		1
b)i)	4		1
b)ii)	ground finch / lives on the ground (only) eats seeds	allow eg eats seeds on / from the ground for 2 marks	1 1
c)	Lamarck		1
Total marks			5