

Evolution 2 MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	lemur(s)		1
b)	gorilla(s) chimpanzee(s)	in either order accept chimps	1 1
c)i)	(Charles) Darwin	accept (Alfred) Wallace if first name given it must be correct	1
c)ii)	variation environment survive generation	in this order allow phonetic spellings	1 1 1 1
Total marks			8

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	Scotland any one from Scotland 15 to 20% / about 1/5th to 1/7th but England and Wales / the others are less / lower / reasonable estimated figures <u>13.4</u> is greater than England / 79 11.4/130 and Wales 2.8/21		1 1
b)i)	broadleaf woodlands have more grey squirrels or broadleaf woodlands have less red squirrels	allow converse referring to conifers	1
b)ii)	Wales has more conifers and / but more grey squirrels or Wales has less broadleaf and / but more grey squirrels	allow converse for red squirrels	1
c)	any three from: grey squirrels have wider range/ more types of food	answers must be comparative they = grey squirrels allow converse arguments for red squirrels ignore reference to other disease	3

	are resistant to parapox (virus) but reds are not have more young each year / litter young more likely to survive (in mixed populations)		
Total marks			7

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	natural		1
a)ii)	simple		1
a)iii)	three billion		1
b)	any two from: •reference to religion •insufficient evidence / couldn't prove it / no proof •mechanism of inheritance / variation not known • reference to other theories • reference to Darwin's status	ignore no evidence allow genes / DNA not known about	2
c)i)	tree		1
c)ii)	hippopotamus and pig	both required, either order allow hippo	1
c)iii)	new evidence from fossils		1
Total marks			8

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	variation (between organisms within species) those most suited / fittest survive genes / alleles passed on (to offspring / next generation)	allow described example allow mutation – but not if caused by change in conditions allow mutation passed on	1 1 1
b)i)	any two from: • increase in latitude reduces number of (living) species • increase in latitude reduces time for evolution (of new species) • the less the time to evolve the fewer the number of	allow converse ignore references to severity of conditions	2

	(living) species		
b)ii)	<p>any two from:</p> <ul style="list-style-type: none"> (increase in latitude reduces number of (living) species because) less food / habitats / more competition at high latitude increase in latitude reduces time for evolution (of new species) because) severe conditions act more quickly / to a greater extent on the weakest (the less the time to evolve the fewer the number of (living) species because) species that evolve slowly don't survive 	do not accept intention or need to evolve allow only extremophiles / well-adapted species can survive	2
Total marks			7

QUESTION 5

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	wing pattern similar to Amauris birds assume it will have foul taste		1 1
b)	<p>mutation / variation produced wing pattern similar to Amauris</p> <p>these butterflies survived</p> <p>breed / genes passed to next generation</p>	do not accept breeds with Amauris do not accept idea of intentional adaptation	1 1 1
Total marks			5

QUESTION 6

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	<p>present day organisms have evolved from simpler organisms over long periods of time or millions / billions of years</p>	ignore answers in terms of natural selection	1 1
b)	(natural selection operates on successful) characteristics produced by	allow this example indicates inheritance of acquired characteristics for 2 marks	1

	chance / (random) mutation in this experiment caused by hormones / environment	allow this is Lamarckism only for 1 mark	1
Total marks			4

QUESTION 7

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	40–42		1
a)ii)	Palaeocene		1
a)iii)	bush babies		1
b)	any two from: religious objections insufficient evidence mechanism of heredity not known	allow 'could not prove' ignore 'no evidence'	2
Total marks			5