

Question Number	Answer	Acceptable answers	Mark
1(a)(i)	B <input checked="" type="checkbox"/> arrow head		(1)

Question Number	Answer	Acceptable answers	Mark
1(a)(ii)	<p>A suggestion including two of the following</p> <p>hunting/fighting/defence (1)</p> <p>{preparing/ cooking/foraging for} food (1)</p> <p>making clothes (1)</p> <p>construction of {shelters/new tools/sharpening tools} (1)</p> <p>making fire (1)</p>	<p>accept weapons</p> <p>accept skinning animals for food/scrapping bones</p> <p>accept skinning for clothes</p> <p>accept chopping wood</p>	(2)

Question Number	Answer	Acceptable answers	Mark
1(b)	<p>An explanation linking two of the following</p> <p>higher abundance (1)</p> <p>more stable over time/less susceptible to decay (1)</p> <p>high mutation rate (1)</p> <p>inheritance down female line (1)</p>	<p>accept easier to extract</p> <p>accept idea of maternal inheritance</p> <p>accept no recombination (1)</p>	(2)

Question Number	Answer	Acceptable answers	Mark
1(c)	<p>A description including two of the following</p> <p>show changes in body structure (1)</p> <p>changes in stone tools (1)</p> <p>a specific example eg Ardi/Lucy/<i>Homo erectus</i> (1)</p>	accept development of named structural changes	(2)

Total for Question 1 = 7 marks

Question Number	Answer	Acceptable answers	Mark
2(a)	<p>A description including three of the following points:</p> <ul style="list-style-type: none"> • all have digits/fingers (1) • all have { similar bones /radius / ulna / carpals} (1) • all have a humerus bone (1) • <u>pentadactyl</u> limb (1) 	<p>accept: phalanges for fingers</p> <p>accept: same bone structure</p>	(3)

Question Number	Answer	Acceptable answers	Mark
2(b)	<p>An explanation including two of the following points:</p> <ul style="list-style-type: none"> • soft tissue of organisms does not form fossils (1) • some fossils are yet to be found (1) • fossils may be damaged (1) • conditions not correct for fossil formation (1) • fossils may only be fragments / not whole organisms (1) 	<p>accept: references to plant or animal tissue</p> <p>accept: reasons why they may not be found</p> <p>accept: reasons for damage e.g. earthquakes</p> <p>accept: named conditions e.g. pH</p>	(2)

Question Number	Answer	Acceptable answers	Mark
2(c) (i)	D 9.0%		(1)

Question Number	Answer	Acceptable answers	Mark
2(c) (ii)	<ul style="list-style-type: none"> • lowered the level of carbon dioxide / carbon dioxide {removed / taken in} (1) • increased the level of oxygen / oxygen {produced / made}(1) 	<p>accept: percentage for level</p> <p>If CO₂ written must be correct, do not accept CO²</p>	(2)

Question Number	Answer	Acceptable answers	Mark
2(c) (iii)	Any two from: <ul style="list-style-type: none"> • large organisms {more complex/carry out greater number of functions / more cells} • for (more aerobic) respiration • for (more) energy 		(2)

Question Number	Answer	Acceptable answers	Mark
3a(i)	Genus – Geospiza Species -conirostris	accept geospiza accept Conirostris	(2)

Question Number	Answer	Acceptable answers	Mark
3a(ii)	A suggestion including two of the following: <ul style="list-style-type: none"> • (different beak sizes/adapted) enable different finches to feed on different food types (1) • less competition between species (1) 	eat different foods accept comparison between 2 beaks and food source more species are able to co-exist (1)	(2)

Question Number	Answer	Acceptable answers	Mark
3a(iii)	B <input checked="" type="checkbox"/> geographic isolation		(1)

Question Number	Answer	Acceptable answers	Mark
3b	<p>A suggestion linking three of the following points:</p> <ul style="list-style-type: none"> • variation between species/ beak sizes/ shapes (1) • due to mutation(1) • competition for resources (1) • survival of the fittest /those best adapted to the environment survived (1) • those who survive pass their genes/characteristics onto their offspring (1) • natural selection (1) 		(3)

Total for question 3 – 8 marks

Question Number	Answer	Acceptable answers	Mark
4(a)(i)	A – adaptations		(1)

Question Number	Answer	Acceptable answers	Mark
4(a)(ii)	<p>Any one from the following:</p> <ul style="list-style-type: none"> • large surface area to facilitate heat loss (1) • insulating/fat layer (1) • correct adaptation of skin / fur / hair(1) 	<p>(thick layer) of bacteria</p> <p>credit observable valid 'suggestions' from the photo</p> <p>ref to not needing to regulate temperature as poikilothermic (1)</p>	(1)

Question Number	Answer	Acceptable answers	Mark
4(a)(iii)	<p>A explanation to include two of the following points:</p> <ul style="list-style-type: none"> • publishing the evidence and results in scientific journals (1) • getting other scientists to review their experiment / repeat the experiment (1) • scientists to investigate hydrothermal vents (1) • participating in scientific conferences to discuss experiment / results (1) • taking samples of organisms in hydrothermal vents for comparison (1) 	<p>use peer review (1)</p> <p>scientists searched the ocean (1)</p> <p>comparing notes/meeting with other scientists (1)</p>	(2)

Question Number	Answer	Acceptable answers	Mark
4(b)(i)	<p>An explanation to include two of the following:</p> <ul style="list-style-type: none"> • competition (occurs between members of a species) (1) • best suited / better adapted members out-compete and survive (1) • these members will reproduce (more times) (1) • the members who cope less well will die / extinction occurs (1) • reference to natural selection (1) 	<p>idea of survival of the fittest (1)</p> <p>reference to passing on genes to help them survive (1)</p> <p>reference to species interbreeding to form hybrids (1)</p>	(2)

Question number	Answer	Acceptable answers	Mark
4(b)(ii)	<p>A description to include the following:</p> <ul style="list-style-type: none"> • the formation of a new species / new characteristics (1) • due to geographical isolation (1) • no longer able to breed with the original species 	<p>{development / evolution} of a {different type / new type} of species (1)</p> <p>due to separation from the original species / change of habitat (1)</p>	(2)

Question Number	Answer	Acceptable answers	Mark
5(a)(i)	650 ÷ 100 (1) x 40 = 260 (1)	10% of 650 = 65 65 x 4 = 260	(2)

Question Number	Answer	Acceptable answers	Mark
5(a)(ii)	discontinuous (variation)	Ignore genetic variation (as not shown in the graph) Accept discrete	(1)

Question Number	Answer	Acceptable answers	Mark
5(b)(i)	C		(1)

Question Number	Answer	Acceptable answers	Mark
5(b)(ii)	A description including the following points: <ul style="list-style-type: none"> • continuous variation / data (1) • normal distribution curve (1) • correct interpretation of data from the graph (1) 	bell shaped curve e.g most common height range 150 - 15	(3)

Question Number	Answer	Acceptable answers	Mark
5(c)	<p>An explanation linking three of the following points:</p> <ul style="list-style-type: none"> • most individuals within a population vary slightly from one another (1) • most organisms produce more young than will survive to adulthood / overproduction (1) • there is much competition within and between species (1) • those organisms with advantageous characteristics will survive (1) • the advantageous characteristics will be inherited / better adapted organisms are more likely to survive to reproduce (1) 	<p>taller animals outcompete smaller animals for food</p> <p>survival of the fittest</p> <p>the genes for the characteristics will be passed on / offspring will have the desired characteristics</p>	(3)