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.LWHD DL WH SRUDND SpeaZDHKÀ R 0•KLNR multiplicata L WH SX—ZDQJD R 7H +RQRQJD R $PHULND PH 0•KLNR , QJ— UHSR H LWLLWL DQD QJ— NDL PH WH WLQR NLDWR R QJ— SXQXD SRUDND H UXD QJ— WDXSRUL NHL WH NDKD DNH .R W•WDKL WDXSRUL HN¯LD DQD NR WH PRPR NDLNLRWD KH SRURZKLWD WH WLQDQD PH W•WDKL NÀSLUR URD KH SDNX QJ— XDXD NDXDH KH PDHQH QJ— Z—KDQJD R WH ZDKD — KH NDLNLRWD LD NR QJ— SÌNRKX ZDL PH QJ— NÀXSDND H NLWHD DQD L UDUR R WH UHSR DQD NDL .R W•WDKL DWX WDXSRUL H N¯LD DQD NR WH PRPR NDLNLNR KH ZK—LWL WH WLQDQD PH W•WDKL NÀSLUR SRWR KH QXL QJ— XDXD NDXDH KH QLKR À WH ZDKD — KH NDLNLNR PRWXKDNH QJ— NDL NR QJ— NÀXUDXUD H NLWHD DQD L WH ZDL

, WXD DWX L W•QHL L QJ— UHSR H WLQR PDWRPDWR DQD QJ— NDL PH WH WLQR LWL R QJ— SXQXD SRUDND NRWDKL DQDNH WH WDXSRUL R WH WRKX—KXD ZDHQJD NDNLWHD PDL L W•WDKL UHSRunga.deWR QXL PRPR NDLNLRWD Kaitiakitanga mo kaikiko

:KDNDWDXULWHKLD WH S—QJD R WH ZKLULZKLUL WDXZKDWL ZKDNDSÌPDX KRNL NL WH UHUHQJD LUDQJD 0(WH PDWDSDNL ND S•KHD WH SXWD R WH ZKDNDPRPR L URWR L WH SRUDND ZDHKÀ R 0•KLNR

:KDNDDKXDWLDQJDUHULND
KWWWS ODEV ELR XQF HGX SIHQQLJ /DE6LWH

, WÀ WXKLQJD PH

‡ ZKDNDDKXDWLDQJDUHULND

‡ ZKDNDDKXDXL³ZKLUNZKLULQJD WDXZKDWL ZKDNDSÌPDX KR W •KHD QJ— WDXSRUL SRUDND ZDHKÀ R 0•KLNR NHL WH Z

‡ ZKDNDP—UDQJD PSDKDQJD ZKLULZKLUL H K—SDL DQD L WH QJ— S•KDQJD ZKLULZKLUL H K—SDL DQD L WH ZKLULZKLU R0•KLNR

.D W—HD WH ZKDNDPDKL KRDKRD ZKDL WDSDQJD QDKDQDKD

+H Z—KL DQÀ PÀ WÀ WX
PÀ W•QHL WÌPDKL NHL W
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Candidates would find it helpful to learn biological concepts within contexts so that they can practice linking all the ideas within an unfamiliar context.

91605: Demonstrate understanding of evolutionary processes leading to speciation

Candidates who were awarded **Achievement** commonly:

- identified Natural Selection as a process that is integral to the evolution of populations
- used correct vocabulary to describe key processes of evolution and speciation
- found suitable example(s) of the biological processes from the resource material to support their description
- identified correctly the relevant biological processes involved in evolution and speciation.

Candidates who were assessed as **Not Achieved** commonly:

- limited description of Natural Selection to “survival of the fittest” with few further details
- gave generalised and incomplete definitions for key biological terms – for example, genetic variation, mutation, allopatric speciation
- described biological processes with little or no reference to the resource material.

Candidates who were awarded **Achievement with Merit** commonly:

- explained, in the context of the question, the process of Natural Selection, including favourability of different phenotypes under selection pressures to allow for survival and breeding
- explained the effects and consequences of similar selection pressures in different environments
- explained the biological effects of competition, predation, habitat isolation at population level
- explained how selective advantage could be gained through different adaptations.

Candidates who were awarded **Achievement with Excellence** commonly:

- discussed the process of Natural Selection linked to the context given in the question
- included relevant details such as selection for suitable phenotypes with corresponding alleles becoming more frequent in the gene pools of the populations
- discussed possible consequences of Natural Selection over time, including plausible speciation mechanisms of populations under different selection pressures
- contrasted the effects of selection pressure in two different environments to identify similarities and differences between them

- evaluated links between connected biological ideas, and related the mechanisms of speciation to a relevant environmental context (glacial/climate change/habitat diversification etc.).

Standard-specific comments

The examination covered a range of ideas from the standard at all levels of achievement.

Candidates were more successful at comparing and contrasting than at justifying or analysing the information.

Some candidates did not understand the biogeography of New Zealand, or what fossil evidence is.

91606: Demonstrate understanding of trends in human evolution

Candidates who were awarded **Achievement** commonly:

- gave clear and concise definitions for key terms
- knew the correct names for parts of the skull and their location or function
- defined the term cultural evolution and identified the tool culture associated with more than one species
- gave brief descriptions of how the named hominins constructed the named tool types
- provided reasons and benefits for migrating out of Africa
- gave simple descriptions of the ‘out of Africa’ model and of mtDNA.

Candidates who were assessed as **Not Achieved** commonly:

- did not answer the bullet points of the question
- restated the information in the question without adding any further descriptors or connectors
- did not name or describe key terms
- identified skull features but could not provide the location or function of these structures.

Candidates who were awarded **Achievement with Merit** commonly:

- explained how changes in skull features can be linked to evidence for bipedalism or to dietary changes
- explained how the different forms of cultural evolution are adaptive advantages for the associated species
- explained the effects of ice ages and formation of land bridges in relation to access routes out of Africa
- explained the evidence used to support the ‘out of Africa’ dispersal model.

Candidates who were awarded **Achievement with Excellence** commonly:

- discussed how changes in skull features provided the selective forces in the trends towards bipedalism, changes in diet, and the increasing intelligence of these hominins
- discussed and linked the adaptive advantages to the survival rate for the species through successful reproduction passing on the favourable traits to the next generation
- discussed and linked how the environmental changes affected rates of dispersal to different parts of the world.

Standard-specific comments

In Question 1, candidates who gained Excellence correctly discussed and linked how the reduction in the early robust features of Skull A provided an opportunity for more energy/space to be directed towards an increase in the cranial capacity and, therefore, brain size of Skull B.

In Question 2, candidates who gained Excellence demonstrated higher level thinking skills by identifying possible disadvantages that cultural trends have had on biological evolution of these early hominins. For example, the reliance on rapid advances in cultural changes has seen the reduced effect that the process of natural selection has had on the populations of these hominins.

Biology subject page

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