

Question 30 (7 marks)

Geological and biological history of New Zealand

<i>Event</i>	<i>Time</i>
Australia and New Zealand separated <i>one apart</i>	85–65 million years ago
New Zealand drifted east and subsided, its land mostly under seawater (most fossils are <u>marine</u>)	85–22 million years ago
Mammals became abundant worldwide	60 million years ago
Earliest migratory bird fossils <i>none of them. Venteracrylins.</i>	55 million years ago
New land created by volcanoes in New Zealand	22 million years ago to present
Many new, unique species of birds appear in the fossil record	20 million years ago to present
Islands completely devoid of mammals. Birds occupied niches that were usually occupied by mammals	700 years ago

Use this information and other relevant knowledge to demonstrate how the practice of biology has led to the validation of current theories of evolution.

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~~The~~ Theories of Australia and Gondwana was first discovered by Alfred Wallace who discovered that many mammals and living things must come from a common ancestor. Due to continental drift New Zealand separating from Australia, the same species have been adapted and separated into different environments and the idea of convergent evolution theories that they all come from common ancestors due to evidence of similar

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Question 30 (continued)

Set of functions though appearance
shape differences. The idea that during
the Jurassic period, fossils have
been found on areas of Gondwana
that dinosaurs such as the Archaeopteryx
was linked to the current present
species of birds in Australia. This
was ~~none~~ ~~by~~ ~~As~~ evidence, Pentadactyl
limbs was that all animals have
1 upper limb, 2 lower limbs and 5
digit fingers. ^{Because the} ~~Archaeopteryx~~ Archaeopteryx
was found to have the same structure
as the current birds such as wing-like
structure, beaks and similar foot structure,
it is evident that birds were related
to dinosaurs. Pentadactyl limbs in
monkeys and apes found the same body
structure as humans resulting in
supporting evidence that humans were
~~also~~ related to monkeys and apes. This
then supports convergent evolution that
different species form some functions and
structures, though when sharing the same
common ancestor such as sharks and dolphins.
Different ancestor paths though some ^{fin and} ~~skin~~
gill structure.

End of Question 30