

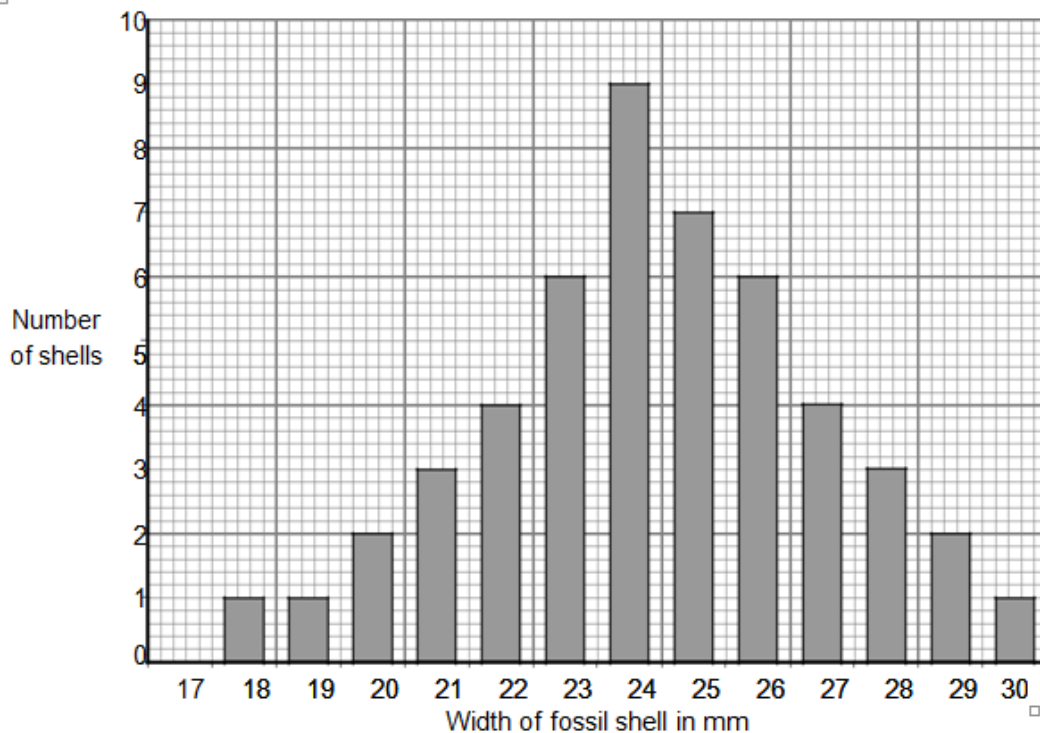
Fossils and Extinction 2

Q:1 Evolution is the development of new species over time. Evidence for evolution comes from fossils.

(a) A species of snail lived 400 million years ago.

Scientists measured the width of 49 fossil shells of this snail.

The bar chart shows the scientists' results.



(a) (i) What is the range of the values for the width of the fossil shells for this species?

From _____ to _____

(1 mark)

(a) (ii) The scientists cannot be sure that this is the full range of fossil shell widths for this species.

Why?

(1 mark)

(b) This species of snail became extinct 380 million years ago.

Give one possible reason why species become extinct.

(1 mark)

Q:2(a) Fossils provide evidence for what early life forms were like. From the evidence, scientists think that life began on Earth more than 3 billion years ago.

Many early life forms were soft-bodied.

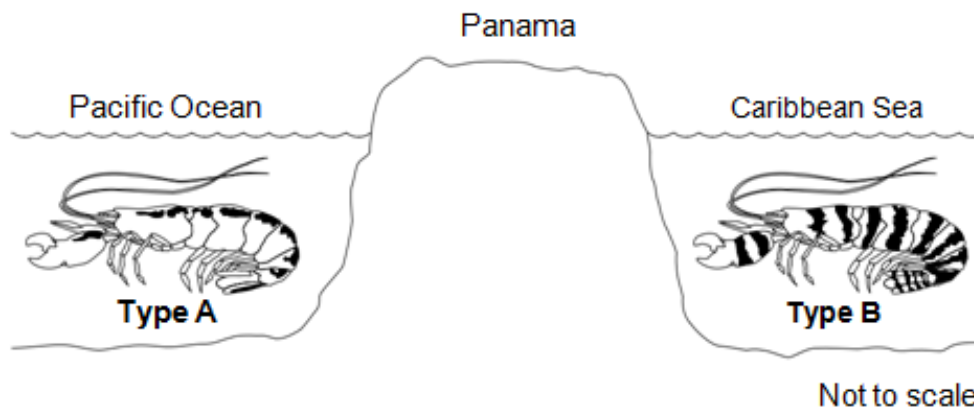
Explain why this makes it difficult for scientists to be certain about what these early life forms were like.

[2 marks]

(b) Figure 9 shows two types of pistol shrimp.

The shrimps live in shallow, tropical seas on opposite sides of Panama.

Figure 9



Scientists put one Type A shrimp and one Type B shrimp together in a tank of seawater.

The two types of shrimp snapped their claws aggressively at each other.

They did not mate.

The scientists said that this was evidence for the Type A and Type B shrimps being classified as two different species.

(b) (i) Give one reason why the scientists' opinion may be correct.

[1 mark]

(b) (ii) Suggest two reasons why the scientists' opinion may not be correct.

1 _____

2 _____

[2 marks]

Q;3 Figure 6 shows a fossil of a sea animal called a Plesiosaur. The Plesiosaur was alive about 135 million years ago.

Figure 6



(a) How can fossils give evidence for evolution?

Tick (☑) one box.

Newer fossils are simpler than older fossils.

Fossils show change over time.

All fossils show the bones of animals.

[1 mark]

(b) Plesiosaurs lived in the sea. There was mud at the bottom of the sea.

Suggest how the fossil shown in Figure 6 may have been formed after the animal died.

[3 marks]

(c) Figure 7 shows what scientists think a living Plesiosaur may have looked like.

Figure 7



Scientists think that the Plesiosaur had smooth skin, with no scales.

The scientists cannot be certain what the skin of a Plesiosaur was like.

Suggest why.

[1 mark]

(d) Plesiosaurs are now extinct.

Give two possible reasons why.

1 _____

2 _____

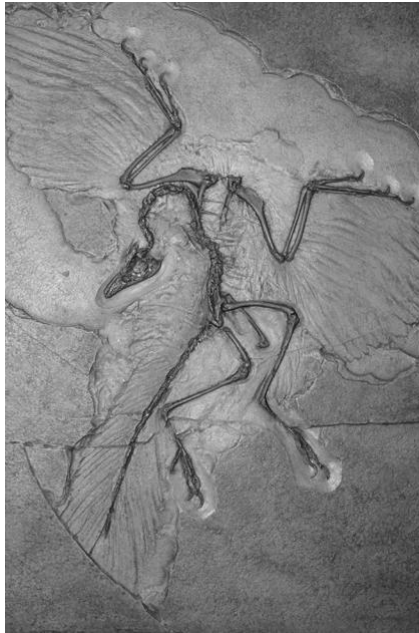
[2 mark]

Q:4 (a) Evidence about extinct species of animals and plants comes from fossils.

Figure 8 is a photograph of a fossil of a bird-like animal called Archaeopteryx.

Archaeopteryx lived about 150 million years ago.

Figure 8



(a) (i) Suggest how the fossil of Archaeopteryx was formed.

[2 mark]

(a) (ii) Scientists have found other fossils of the ancestors of modern birds, but the fossil record is very incomplete.

Suggest two reasons why there are gaps in the fossil record.

1 _____

2 _____

[2 mark]

(b) There are many different species of bird on the Earth today.

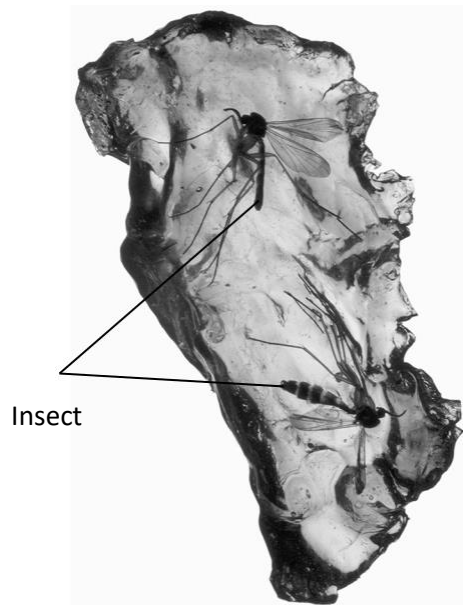
Describe how these different species may have evolved from an ancestor such as Archaeopteryx.

[4 mark]

Q:5 Fossils give us information about organisms from a long time ago.

(a) Amber is a solid, glass-like material. Amber is formed from a thick, sticky liquid which oozes out of pine trees.

Figure 6 shows two fossil insects in amber.



(a) (i) Suggest how the insects came to be preserved in the amber.

[2 mark]

(a) (ii) Give two other ways fossils are formed.

1 _____

2 _____

[2 mark]

(b) The fossil record shows that many organisms, including the dinosaurs, became extinct 65 million years ago.

One theory was that volcanic activity might have caused this mass extinction. Many scientists believe that this extinction was caused when an asteroid collided with the Earth.

(b) (i) A new scientific theory may replace an old theory.

Why might this happen?

Tick (☑) one box.

Evidence from amber is unreliable.

Internet evidence is more reliable than fossil evidence.

New technology provides more valid evidence.

[1 mark]

(b) (ii) Give three reasons, other than volcanic activity and collision with an asteroid, why a species may become extinct.

1 _____

2

3

[3 mark]

TOTAL MARKS=34