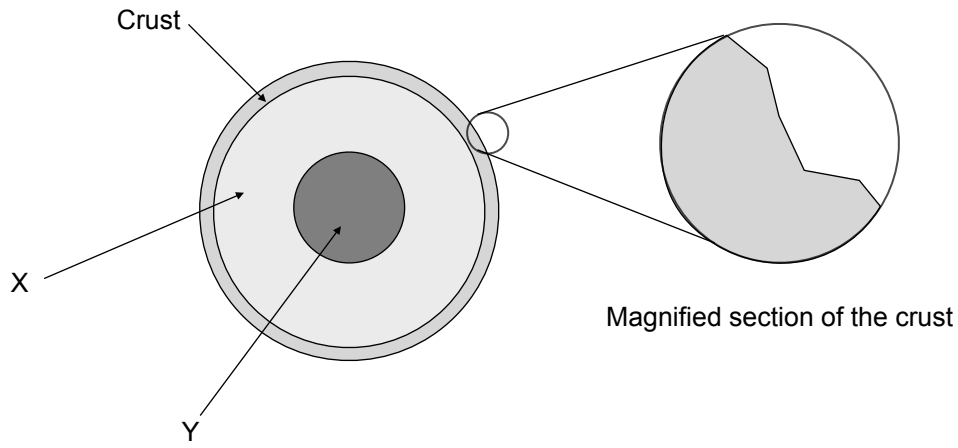
Do not write outside the box

1 The diagram shows the different layers in the Earth. A small section of the crust has been magnified to show details of the surface.



1 (a) (i) Name the parts labelled X and Y. **[2 marks]**

Part X Mantle [1]

Part Y (Inner or Outer) Core. [1]

1 (a) (ii) The magnified section shows that the crust of the Earth is not even.

Scientists used to believe that the uneven surface was due to the cooling of the planet early in its history.

How could the cooling of the planet cause an uneven surface? **[1 mark]**

Caused by the shrinking of the Earth's crust, due to cooling. [1]

1 (a) (iii) In 1915, Alfred Wegener proposed his theory of continental drift. Scientists did not accept his theory.

Give one reason why scientists did not accept Wegener's theory in 1915. **[1 mark]**

Scientists thought that continents cannot move or not enough evidence. [1]

Also allowed is that scientists had theories to explain some of Wegener's observations, e.g. fossil location or Wegener was not respected as a scientist.

1 (a) (iv) About 50 years later, the theory of plate tectonics was developed which confirmed the continental drift theory. The theory of plate tectonics explains earthquakes.

Explain how earthquakes occur. **[2 marks]**

Vibration or shockwaves (in the Earth) or jolts or slips [1]

caused by convection currents or movements in the mantle. [1]

You may have learned about p waves and s waves which could get you a mark, but it's not on the spec.

Do not write outside the box

1 (a) (v) Earthquakes are hard to predict.

Suggest why. **[1 mark]**

Scientists do not know what happens under the crust or how to measure the pressures building up in the crust or there is no pattern. [1]

1 (b) The movements in the Earth's crust are caused by processes deep in the Earth.

Explain how these processes cause the movements in the Earth's crust. **[3 marks]**

Mantle is heated by radioactive processes in the core. [1]

(Hot) Mantle rises and cools. [1]

Mantle is reheated and rises again or convection current is produced [1]

which moves plates in Earth's crust. [1]

(Total 10 marks)

End