

TWENTY FIRST CENTURY
science

Module P1

THE EARTH IN THE UNIVERSE

Practice test

FOUNDATION

Name:.....

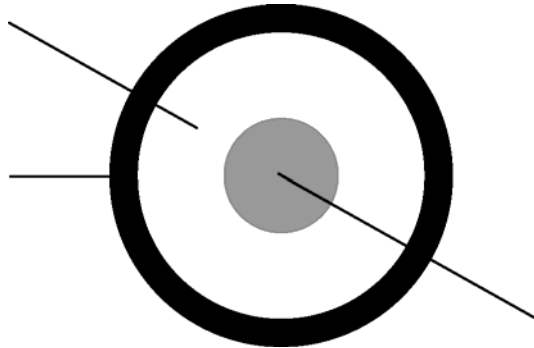
Form/teaching set:.....

Answer all of the questions.

Write your answers in the spaces provided on this paper.

1 This question is about the rocks in the Earth.

(a) The diagram shows a cross-section through the Earth.



Complete the diagram of the Earth's structure by adding labels.

Choose from these words.

core crust mantle ocean

[3]

(b) Rocks can provide evidence for changes in the Earth.

The illustration shows some layers of rock in a cliff.



- (i) Complete the illustration by adding labels. [2]

Choose words from the list.

folded layers

oldest layers

youngest layers

- (ii) Which of these labels describes **an observation**?

..... [1]

- (iii) Which of these labels describes **an explanation**?

..... [1]

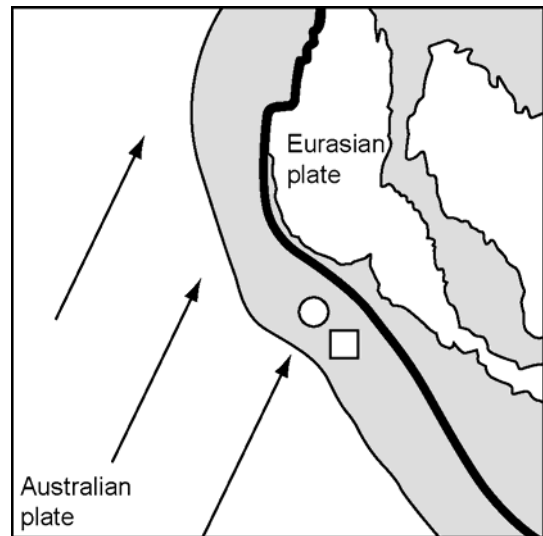
[Total marks: 7]

2 Read the report and use the information to help you answer the questions.

On 28 March 2005, a massive earthquake struck off the west coast of Sumatra. The earthquake was caused by the sudden release of strain that had built up between two of the Earth's tectonic plates.

Along the west coast of Sumatra, the denser oceanic crust of the Australian plate is dragged down below the continental crust. The Australian plate is moving northeast at a rate of about 5 cm per year. Strain accumulated until failure occurred, driving the two plates past one another and releasing energy in the form of an earthquake.

A government seismologist (a scientist who studies earthquakes) is now working to find out whether this earthquake will cause further large earthquakes. A large earthquake on the edge of the tectonic plate in Sumatra would be devastating, because it many people live there.



- earthquake magnitude 8.7 March 2005
- earthquake magnitude 9.0 December 2004

(a) (i) What was the **magnitude** of the earthquake on 28 March 2005?

.....

[1]

(ii) Underline one phrase in the passage which supports Wegener's theory that the continents are moving.

[1]

(iii) Write down **one** piece of **data** which supports Wegener's theory.

.....

[1]

(b) The government has employed someone to find out if more large earthquakes are likely.

What is this person's occupation?

..... [1]

(c) **(i)** Explain why a large earthquake on the edge of the tectonic plate in Sumatra would be very serious.

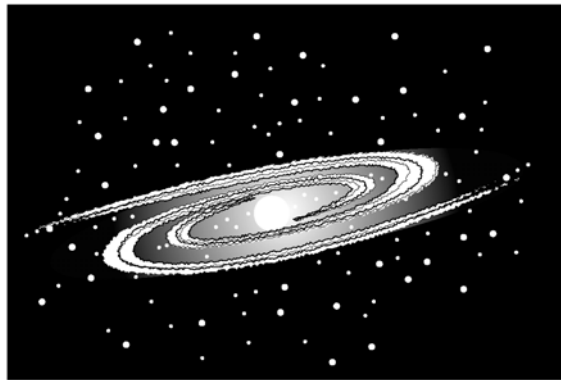
.....
..... [1]

(ii) Describe two ways in which the government in Sumatra could reduce the damage from future earthquakes.

.....
.....
.....
..... [2]

[Total marks: 7]

3 This question is about how scientists get information about the Universe.



(a) Scientific data suggests that the Solar System was formed from clouds.

What were the clouds made of?

Choose two substances from the list.

Put a **ring** around the **two** best answers.

ashes **dust** **gases** **satellites**

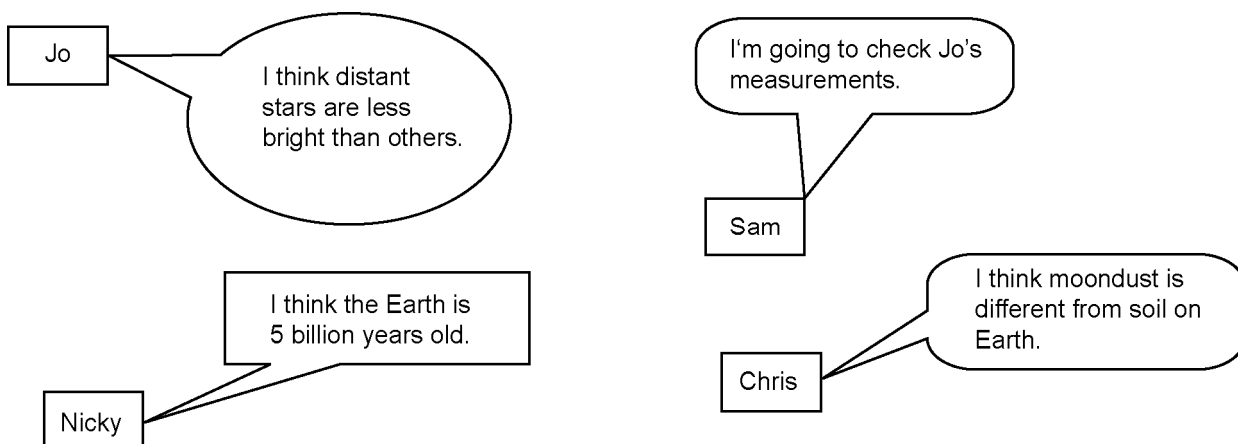
[2]

(b) Stars release energy which we collect using telescopes.

This gives information.

Scientists use the information as evidence for ideas about the stars.

The diagram shows four scientists talking about their work.



(i) Which scientist would use information from a telescope to support their idea?

.....

[1]

(ii) Why does Sam intend to check Jo's measurements?

Put a tick (✓) in the box next to the **best** explanation.

Sam and Jo always work together.

Sam and Jo are rivals.

Sam thinks Jo has made a mistake.

Sam will evaluate Jo's work.

[1]

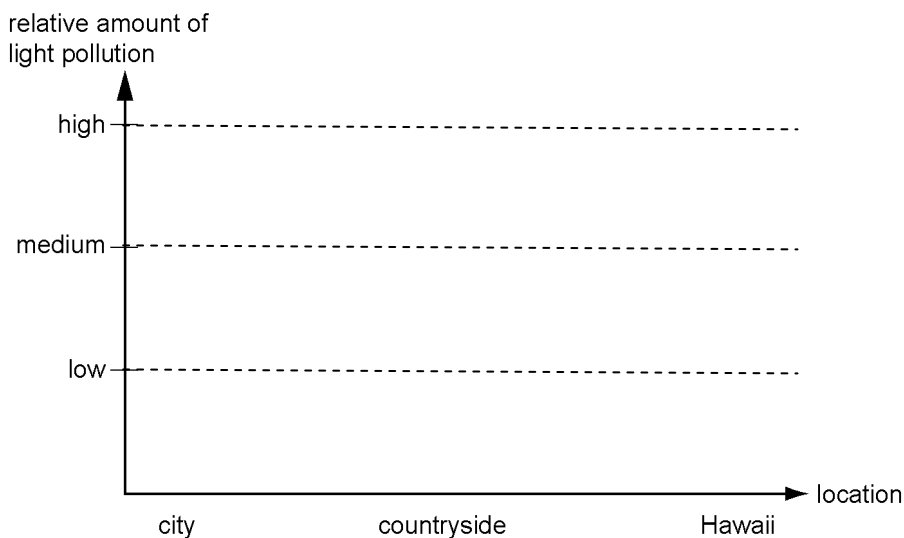
(c) A university in a city has a telescope there. Scientists use it during the day.

There is also a telescope in the countryside. Scientists use this when the city lights are bright.

To observe very faint stars, the scientists have to use a telescope in Hawaii.

Complete the bar chart to compare the amount of **light pollution** in the city, in the countryside, and in Hawaii.

Draw **three** bars on the chart.



[2]

[Total marks: 6]

[Total marks for test: 20]

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Module P1

THE EARTH IN THE UNIVERSE

Practice test

HIGHER

Name:.....

Form/teaching set:.....

Answer all of the questions.

Write your answers in the spaces provided on this paper.

1 The diagram shows some rock layers.



Rocks can provide evidence for changes in the Earth.

(a) Draw a straight line from each **observation** to the **idea** which it supports.

One has been done for you.

Observation

folded layers

order of layers

the layers are made of different types of rock

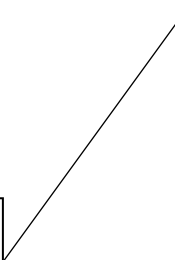
Idea

a large force has pushed the rocks

the type of sediment changed over time

we can compare the ages of the rocks

we can measure the ages of the rocks



[2]

- (b) Scientists used radioactive elements to work out the age of the oldest rocks on Earth.

They found that their age is 3.6 billion years.

Put a tick (✓) in the box next to the correct sentence.

This proves that the Earth is about 3 billion years old.

This proves that the Earth is about 4 billion years old.

This suggests that the Earth is about 3 billion years old.

This suggests that the Earth is about 4 billion years old.

[1]

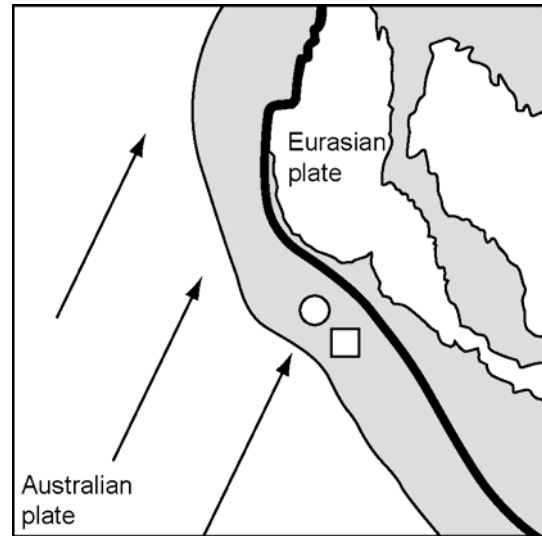
[Total marks: 3]

2 Read the report and use the information to help you answer the questions.

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- earthquake magnitude 8.7 March 2005
- earthquake magnitude 9.0 December 2004

(a) Which tectonic plate was moving northeast?

.....

[1]

(b) Write down one piece of data which supports Wegener's theory that the continents are moving.

.....

[1]

(c) What happens to the Australian plate in the zone where it meets the Eurasian plate?

Underline the phrase in the passage that describes this.

[1]

(d) Write down **three** phases in the process that led to the earthquake.

1

.....

2

.....

3

.....

[3]

(e) Describe two ways in which the government in Sumatra could reduce the damage from future earthquakes.

.....

.....

.....

.....

[2]

[Total marks: 8]

3 This question is about the formation of stars and the Solar System:

The Solar System contains many chemical elements which are larger than helium.

Complete the sentence. Choose the **best** phrase from the list.

earlier stars a hydrogen cloud helium nuclei the moon

This suggests that the Solar System was formed from [2]

Stars release vast amounts of energy by fusion.

Link three boxes to describe the process of fusion.

Draw **two** straight lines to join **one** box in each column to **one** box in the next column.

carbon dioxide	atoms	fuse
hydrogen	molecules	separate
oxygen	nuclei	react chemically

[2]

[Total marks: 4]

4 This question is about using telescopes to obtain knowledge about the Universe.

(a) Scientists use the information from telescopes as evidence for ideas about the stars.

(i) Jo measures the distance to some distant galaxies. She also measures their speeds.

Describe the relationship between the speed of distant galaxies and their distance away.

.....

..... [1]

(ii) What do Jo's observations tell us about space and the Universe?

.....

..... [2]

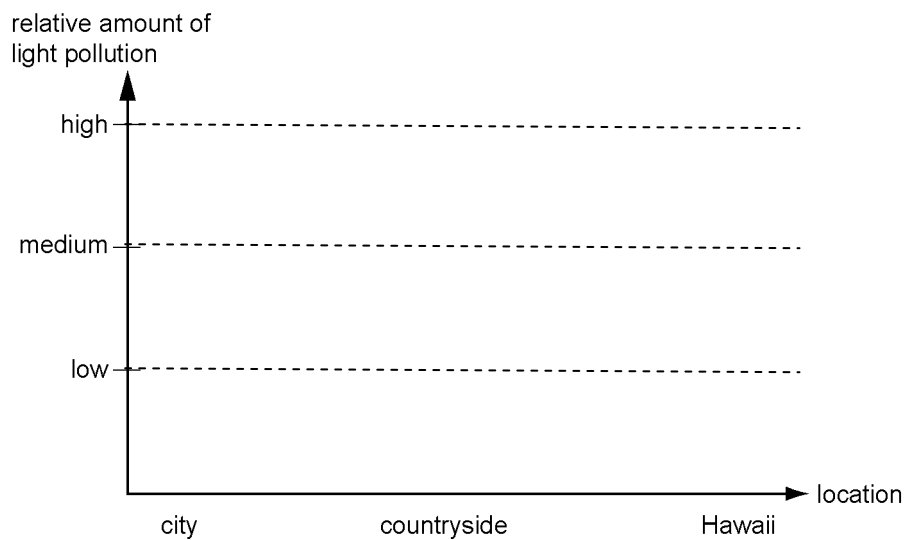
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[2]

[Total marks: 5]

[Total marks for test: 20]