



PLACEMENT TEST

READING

READING PASSAGE 1

VENUS

The planet Venus, named after the Roman goddess of love, is the second closest planet to the Sun (Mercury is the closest), and the second brightest natural object in the night sky (after the Moon).

From Earth, Venus is brightest just after sunset and just before dawn. Because of this, the planet is often known as the Morning Star or the Evening Star. Venus is also sometimes known as the Earth's sister, because both planets share similarities in terms of size – Venus' surface area and volume are just a little smaller than Earth's. However, scientists believe that, several billion years ago, Venus and Earth were much more similar than they are today. Back then, Venus' atmosphere was more like Earth's, and there was almost certainly water in liquid form on the surface. Over time, Venus became hotter, and this water evaporated. Today, the planet's surface is a dry dusty desert.

Above the ground on Venus are sulphuric acid clouds. These thick clouds prevent the surface of the planet being seen from Earth. Indeed, it is only in the last few decades that scientists have discovered what the surface of the planet is really like. In the early 1990s, NASA's Magellan spacecraft mapped the surface of Venus in detail for the first time. Its radar images of hills, ridges and craters are almost photographic in their quality.

Questions 1–3

Which **THREE** of the following statements are true, according to the reading passage?

NB Your answers may be given in any order.

1 _____ 2 _____ 3 _____

- A The Moon is the brightest natural object in the night sky.
- B From Earth, Venus is at its brightest in the middle of the night.
- C Venus is a slightly larger planet than Earth.
- D Venus' atmosphere has changed greatly over billions of years.
- E A telescope is required to see Venus' surface from Earth.
- F Scientists now have a detailed map of the surface of Venus.
- G The surface of Venus is almost completely flat.

Questions 4–10

Complete the sentences.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

- 4 The ancient Romans had a _____ called Venus.
- 5 Only _____ is closer to the Sun than Venus.
- 6 Venus has been called the _____, the Morning Star and the Evening Star.
- 7 It is highly likely that there was _____ on Venus in the past.
- 8 Venus is a much _____ planet than it used to be.
- 9 Venus' thick clouds are made of _____.
- 10 The spacecraft Magellan used _____ to create pictures of the surface of Venus.

READING PASSAGE 2

SUPERCONDUCTIVITY

In 1908, Heike Kamerlingh Onnes became the first scientist to produce liquid helium, achieving the lowest temperatures recorded up to that point. A number of researchers had suggested that materials behaved differently at very low temperatures, and this substance was important in allowing experiments that confirmed it. Working with solid mercury, Onnes demonstrated the phenomenon of superconductivity. This is when the electrical resistance of the metal drops suddenly to zero. No energy is lost as an electric current travels through the material, making it very efficient for storing or transmitting power. Since the work done by Onnes, other superconducting materials have been discovered that can be used at higher temperatures and which are therefore more economical.

There are a number of practical applications of superconducting materials. Many of these applications are based on the fact that the materials can be made into extremely powerful electromagnets. These are used in scientific experiments to direct beams of particles. They also form part of maglev trains – trains that float a small distance above the rails because of magnetic forces. Because there is no contact between the train and the rail, this form of transport is capable of very high speeds, although it is unlikely to be in widespread use until costs drop considerably.

Questions 11–15

Do the following statements agree with the information given in the Reading Passage?

Write

TRUE	<i>if the statement agrees with the information</i>
FALSE	<i>if the statement contradicts the information</i>
NOT GIVEN	<i>if there is no information on this</i>

- | | | |
|----|--|-------|
| 11 | Many people had tried to produce liquid helium before Onnes. | _____ |
| 12 | Onnes was the only scientist interested in very low temperatures. | _____ |
| 13 | Liquid helium was used for science at very low temperatures. | _____ |
| 14 | Only metals can be used as superconductors. | _____ |
| 15 | Superconductors that work at higher temperatures are more expensive. | _____ |

Questions 16–20

Complete the summary of the second paragraph.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

Superconductors are used in a variety of contexts. Very **16** _____ can be made out of superconducting materials and scientists use them in **17** _____. In transport, maglev trains rely on the **18** _____ produced in superconductors to raise the train above the rails, the lack of **19** _____ meaning that high velocities can be reached. The **20** _____ of maglev systems limit their use.

