

## Black Body Radiation

1 Paragraph 1 implies that the energy that warms the ground and the air above it comes from:

- A – the sun.
- B – radioactive decay within the earth.
- C – the sun in the form of infrared (heat) radiation.
- D – includes contributions from many different sources.

2 The first sentence under the heading *What exactly is a black body* has been put in italics because:

- A – it is important.
- B – for emphasis.
- C – because it should be ignored by serious readers.
- D – because it is an aside.

3 The author clearly says that a truly black body cannot be made. On reading the article do you:

- A – agree with him.
- B – doubt the truth his statement.
- C – believe his statement is an exaggeration.
- D – believe that for practical purposes his statement is untrue.

4 On page 2 the writer refers to what he calls a *cavity radiator*. From your reading of the article a cavity radiator is necessarily:

- A – made of clay.
- B – black inside.
- C – heated to temperatures above 700 °C.
- D – none of the above.

5 Why exactly does the writer refer to a white-skinned person as being a near black body?

- A – all bodies are more or less the same.
- B – he does not want to insult black people.
- C – he is concerned with infrared radiation only.
- D – visible light has nothing to do with black body radiation.

6 From your reading of the article the area under an ideal black body curve:

- A – was first calculated by Stefan.
- B – is the same at all temperatures.
- C – is proportional to the fourth power of temperature.
- D – is an experimental quantity that cannot be calculated.

7 The writer states that peak of the black body curve for the sun is in the green region of the visible spectrum, but the sky is coloured by sunlight, and is blue or yellow: never green.

- A – The writer is mistaken.
- B – Our eyes are not sensitive in the green.
- C – The atmosphere is not transparent in the green.
- D – None of the above.

8 The emissivity of the sun is said to be close to 1.00. The reason for this surprisingly high value is:

- A – the sun is an almost perfect black body.
- B – the effective black body temperature has been chosen to make this true.
- C – the high value is an accidental coincidence.
- D – the value is only approximately 1.