

IB • SL • Physics

🕒 5 mins ❓ 5 questions

Multiple Choice Questions

Greenhouse Effect

Albedo & Emissivity / The Solar Constant / Greenhouse Gases / The Greenhouse Effect / Energy Balance Problems

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Total Marks

/5

1 Which of the following contributes to the enhanced greenhouse effect?

- A. Burning fossil fuels
- B. Destruction of the ozone layer
- C. Carbon dioxide from active volcanoes around the world
- D. Increase in ultraviolet radiation penetrating the Earth's atmosphere

(1 mark)

2 Which equation is used to calculate emissivity?

- A. $\frac{\text{power radiated by an object}}{\text{power emitted by a black body}}$
- B. $\frac{\text{power emitted by an object}}{\text{power emitted by a black body}}$
- C. $\frac{\text{total scattered power from an object}}{\text{total incident power from a black body}}$
- D. $\frac{\text{power absorbed by an object}}{\text{power absorbed by a black body}}$

(1 mark)

3 The average albedo of desert sand is 0.4. What is the $\frac{\text{power absorbed by desert sand}}{\text{power reflected by desert sand}}$?

- A. 0.4
- B. 0.67

C. 1.5

D. 4.0

(1 mark)

4 Which of the following describes the role of carbon dioxide in the greenhouse effect?

A. It absorbs incoming radiation from the Sun.

B. It reflects incoming radiation from the Sun.

C. It absorbs outgoing radiation from the Earth's surface.

D. It reflects outgoing radiation from the Earth's surface.

(1 mark)

5 The solar constant is the intensity of the Sun's radiation at

A. the surface of the Earth

B. the surface of the Sun

C. the average distance between the Sun and the Earth

D. the top of the Earth's atmosphere

(1 mark)