

Quiz - 4: Oceans and paleoclimate

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Questions: 10

Finish**Save All****Help****1. Ocean temperature measurements** (Points: 10)

From the middle of the twentieth century to the end, the number of direct measurements of ocean temperature

- a. stayed the same.
- b. decreased.
- c. increased.

Save Answer**2. Sea-level change** (Points: 10)

Over roughly the last decade of the twentieth century, the largest contributor to rising sea level appears to have been

- a. thermal expansion of sea water.
- b. melting of the Antarctic ice sheet.
- c. melting of the Greenland ice sheet.
- d. melting of glaciers and ice caps (outside of Greenland and Antarctica).

Save Answer**3. Reconstructions of Northern Hemisphere temperature** (Points: 10)

Over the years 1000 - 1800, temperature reconstructions most commonly show Northern Hemisphere temperatures

- a. roughly 0.0 to -0.5 deg C cooler than the 1961-1990 average.
- b. decreasing at a rate of about 0.5 deg C per century.
- c. about 1 - 2 deg C warmer than the 1961-1990 average.
- d. becoming about 1 deg C warmer than present, then cooler than present.

Save Answer**4. Proxies for past temperature** (Points: 10)

Which of these are ways that we can know past temperatures?

- A. Changes in tree growth
- B. Changes in organism distributions

- C. Changes in isotope ratios
- D. Historical records

- 1. A, B, C, D
- 2. B, C
- 3. A, D
- 4. A, B, C

Save Answer

5. Carbon dioxide in the distant past (Points: 10)

Various sources indicate that 200 million years ago, atmospheric carbon dioxide levels were much lower than at present.

- True False

Save Answer

6. Greenhouse gas levels from ice cores (Points: 10)

Records of past greenhouse gas levels over the past 650,00 years from ice cores show that during interglacial periods (multiple correct responses - select all of them for full credit)

- a. methane (CH₄) levels were higher than average.
- b. carbon dioxide (CO₂) levels were higher than average.
- c. carbon dioxide (CO₂) nearly disappeared from the atmosphere.
- d. methane (CH₄) was as large as present.

Save Answer

7. Atlantic meridional overturning circulation (Points: 10)

It is very likely that the Atlantic meridional overturning circulation has varied on

- a. seconds to minutes time scales.
- b. on daily to weekly time scales.
- c. interannual and decadal time scales.
- d. in phase with the moon.

Save Answer

8. Ocean pH (Points: 10)

Over the last 20 years, the oceans appear to have become less alkaline and more acidic

- True False

Save Answer

9. Sea-level trends (Points: 10)

Measured sea-level changes from 1993-2003, using satellites, correspond well with changes that would have occurred due to

- a. increased evaporation from the ocean.
- b. thermal expansion.
- c. construction of dams.
- d. water conservation efforts.

Save Answer

10. Glacier changes in the Holocene (Points: 10)

During the second half of the Holocene,

- a. changed little from current sizes.
- b. flowed faster.
- c. glaciers reformed and expanded.
- d. shrank to current extents.

Save Answer

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