

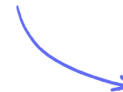
Structured Questions

Climate Change

Causes of Climate Change / Impact of Climate Change / Carbon Sequestration

Easy (2 questions)	/13
Medium (2 questions)	/11
Hard (3 questions)	/12
Total Marks	/36

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Easy Questions

- 1 (a) Increased carbon dioxide levels in the atmosphere are having an effect on ocean chemistry.

Outline the way in which atmospheric carbon dioxide affects the pH of oceans and how this change may impact marine organisms.

(7 marks)

- (b) Define the term *carbon sequestration* in the field of climate science.

(1 mark)

2 (a) Outline the relevance of increasing atmospheric carbon dioxide levels to the results shown in part (a).

(3 marks)

(b) Describe a process that removes carbon dioxide from the atmosphere **other** than that referred to in part (b).

(2 marks)

Medium Questions

- 1 (a) The image below shows two shells from marine organisms. Both shells were placed in a saltwater solution for 45 days; shell A at pH 8.5 and shell B at a pH of 7.



A



B

Explain the results shown in the image.

.....
.....

(2 marks)

- (b) Outline the relevance of increasing atmospheric carbon dioxide levels to the results shown in part (a).

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.....
.....

(3 marks)

- (c) Describe a process that removes carbon dioxide from the atmosphere **other** than that referred to in part (b).

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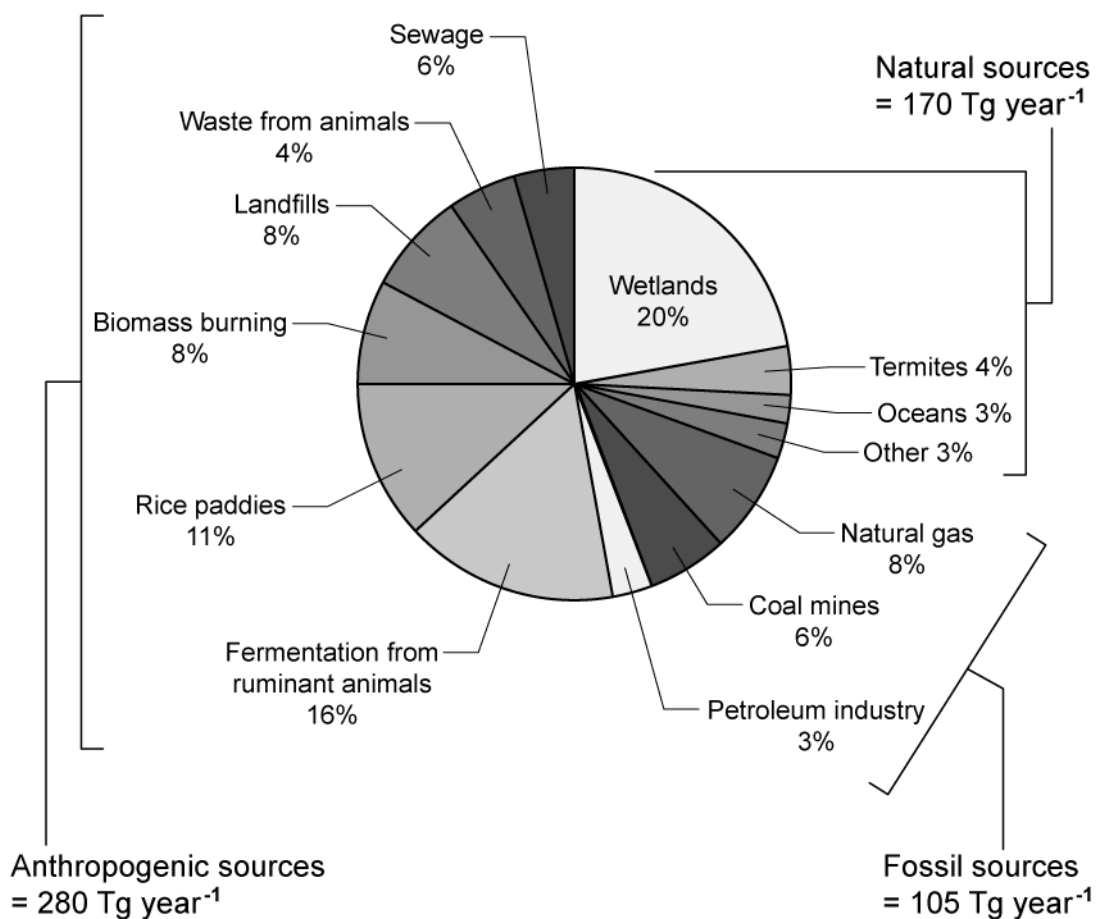
(2 marks)

2 Outline the impacts of increasing average global temperatures.

(4 marks)

Hard Questions

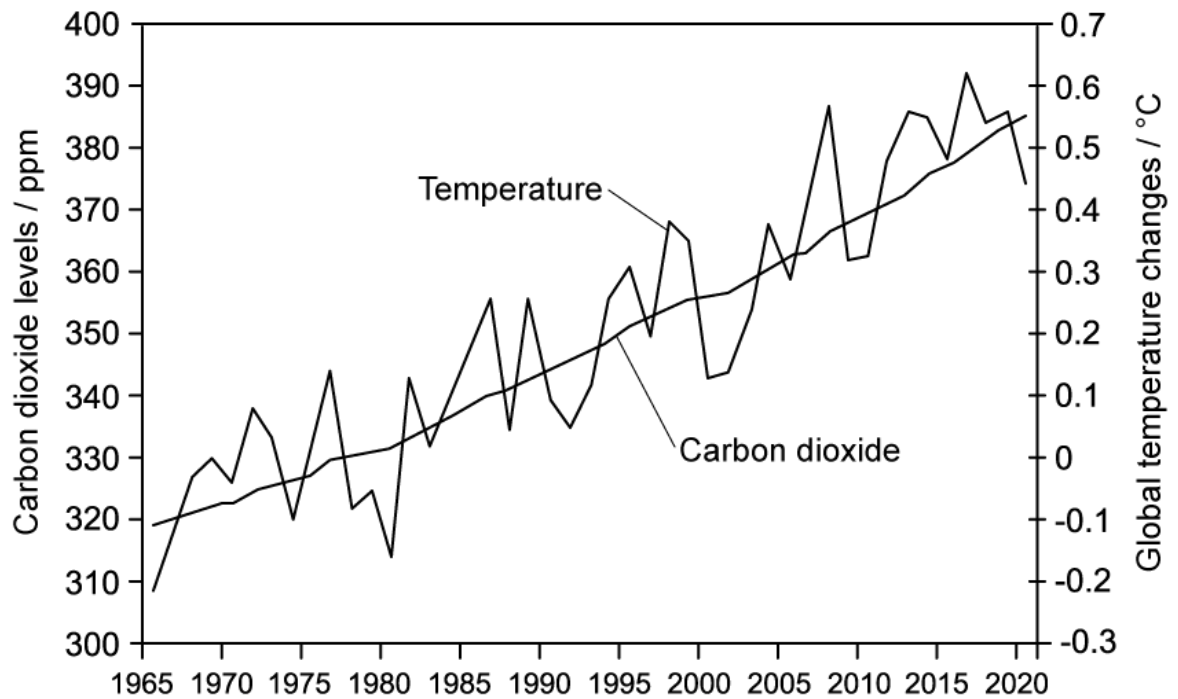
- 1 Methane is an example of a greenhouse gas that commonly occurs in the atmosphere. The graph below shows the main sources of methane as well as the percentage contribution of the different components of each source. A teragram (Tg) equals 10^{12} grams and is equivalent to one megatonne (1 million tonnes).



Calculate the amount of methane, in Tg year^{-1} , that is released from wetlands. Show your working.

(2 marks)

- 2 (a) Carbon dioxide is one of the main greenhouse gases in the atmosphere. The graph below shows the changes of carbon dioxide levels in the atmosphere, as well as the change in global temperatures over a period of time.



Describe the general trends in the data.

(3 marks)

- (b) Suggest possible causes of the trends in the data presented in part (a).

(2 marks)

- (c) Discuss the importance of greenhouse gases, such as carbon dioxide, in the atmosphere.

(2 marks)

3 *One mark is available for clarity of communication throughout this question.*

Suggest the possible impact that an increase in global temperatures would have on the polar regions, as well as the global consequences of this impact.

(3 marks)