CKQ Answer Key

The **correct answer** to each question is displayed below, along with a link pointing to information that supports the statement. For most questions, a listing of additional papers that support the answer are also provided.

1. Which of the following statements about global climate change is true? Note: the phrase "global climate change" refers to observations such as increased global temperature, decreased presence of ice, and changes in precipitation patterns
· Most climate scientists agree that global climate change is happening
IPCC reference for Q1
Additional papers for Q1

2. Most scientific studies that have looked into the cause behind the increase in global temperature over the last 50 years indicate that it is…
· Caused mostly by human activities
IPCC reference for Q2
Additional papers for Q2

3. Which of the following best describes the relationship between climate and weather?
· Weather describes short-term conditions; climate describes long-term conditions
NOAA Glossary
Additional paper for Q3

4. Studies of natural records such as tree rings and layers of ice in glaciers:
· Provide a relatively consistent picture of how global temperature has changed over time

has changed over time
IPCC reference for Q4
Additional papers for Q4

5. Over the last 10,000 years, during the time humans developed the ability to raise crops, Earth's climate has been:
· more stable than previous periods
United Nations Environment Programme reference
Additional papers for Q5

6. Which of the following processes have been identified as the most significant causes of increasing global temperatures over the last century? Check the top three
· Burning of coal, oil, and natural gas to produce electricity and heat buildings
IPCC reference 1 for Q6
IPCC reference 2 for Q6

7. Indicate if the following statements are True, False, or you Don't Know.

A. If the amount of energy put out by the Sun decreased, Earth would get cooler NOAA Paleoclimatology climate forcing data Additional papers for Q7A	**True**
B. Global climate change will eventually eliminate the differences between summer and winter. IPCC reference for Q7B Additional papers for Q7B	**False**
C. Climate scientists have a solid understanding of the basic physical processes that control	**True**

Earth's climate system. IPCC reference for Q7C Additional papers for Q7C	
D. Today's computer-based climate models have successfully projected the trend and magnitude of observed global temperature for the last century. IPCC reference for Q7D Additional papers for Q7D	**True**
E. As the ocean warms, its waters expand, raising the elevation of the sea's surface. IPCC reference for Q7E Additional papers for Q7E	**True**
F. Melting of glaciers and ice sheets on land is expected to have little effect on global sea level. IPCC reference for Q7F Additional papers for Q7F	**False**
G. Temperature measurements of Earth made from satellites are generally consistent with temperatures measured by ground based instruments. IPCC reference for Q7G Additional papers for Q7G	**True**

8. Climate scientists' concern about rising levels of carbon dioxide in the atmosphere relates to carbon dioxide's

· **ability to absorb and release heat energy**

IPCC reference for Q8

Additional papers for Q8

9. Since 1750, when the Industrial Revolution began, the amount of carbon dioxide in the atmosphere has increased
· significantly – a change of about 40% (from 280 to 392 ppm)
IPCC reference for Q9
NOAA Earth System Research Laboratory Trends in Carbon Dioxide

10. Which country below currently emits the most carbon dioxide per person?
Note: This question is about per person emissions rather than total emissions.
· United States
WorldBank Indicators reference for Q10
Additional papers for Q10

11. Which of the following are among the expected impacts of global climate change? Check all that apply
· Heavier downpours when it rains
· Changes in the ranges of wildlife and plants
· Increase in coastal flooding due to sea level rise
IPCC reference 1 for Q11
IPCC reference 2 for Q11
National Climatic Data Center Billion Dollar Disasters
Additional papers for Q11

12. Indicate if the following statements are True, False, or you Don't know

A. As a result of global climate change, the warmest places on Earth are likely to see the greatest increases in temperature. IPCC reference for 12A Additional papers for Q12A	**False**
B. Over the last decade, the U.S. has experienced about twice as many record-breaking hot days as record-breaking cold days. American Meteorological Society reference for Q12B Additional papers for Q12B	**True**

C. Most of the heat added to Earth's climate system over the last five decades has been absorbed by the ocean. IPCC reference for Q12C Additional papers for Q12C	**True**
D. Federal agencies are already working with communities to help them prepare for extreme weather and climate impacts FedCenter.gov reference	**True**
E. Corals in warm, tropical seas around the world are thriving as the ocean waters around them get warmer. IPCC reference for Q12E Additional papers for Q12E	**False**

13. Recent research shows that the acidity of ocean waters is increasing. This phenomenon, called ocean acidification, is

· a result of carbon dioxide being absorbed by the ocean

NOAA Pacific Marine Environmental Laboratory Ocean Acidification page

Additional papers for Q13

14. By monitoring conditions within and above the Pacific Ocean, climate scientists have identified a pattern called the El-Niño Southern Oscillation. This phenomenon:

· can influence global weather patterns for several seasons

NOAA El Niño Page

Additional papers for Q14

NOTE: If you have suggestions for improving this survey, please email them to LuAnn.Dahlman@noaa.gov and Gregory.R.Hammer@noaa.gov.