Name_____   Date_____

Life and Climate—Questionnaire

Circle all correct answers (there may be more than one)

1. A. 4.6 billion years ago, Earth formed from:
   a. the Moon   b. asteroids   c. cloud of gas and dust
   d. the Sun   e. comets   f. a galaxy

2. 4.3 billion years ago:
   a. Earth had no oxygen   d. the surface was still melted rock
   b. Earth had no oceans   e. volcanoes erupted carbon dioixde
   c. air was mostly carbon dioxide   f. there was no life on the planet

3. 3.9 billion years ago:
   a. Earth had oxygen   d. The atmosphere began to cool
   b. Earth had an ocean   e. there was no life on the planet
   c. Earth had less carbon dioxide   f. first microscopic life appeared

4. The earliest life forms were
   a. viruses   b. stromatolites   c. worms
   d. blue-green algae   e. plants   f. seaweed

5. About 670 million years ago
   a. The first mamals evolved   b. complex life started c. Pangaea formed
   d. dinosaurs roamed the planet   e. first fish evolved   f. Pangaea broke up

6. The approximate dates that rocks were formed can be determined by the following meth-
   ods (Us the back of this sheet if necessary):

   a. _____   b. _____

   c. _____   d. _____

   e. _____   f. _____

7. The first living things changed the atmosphere by:
   a. absorbing carbon dioxide   b. giving off oxygen   c. producing ozone
   d. increasing global warming   e. absorbing sunlight   f. growing in water

8. By about 670 million years ago:
   A. How had the content of the atmosphere changed?_____

   _____

   B. How did the changed atmosphere affect life? _____

   _____

9. As the climate on Earth shifted from warm to cold and back again, over hundreds of
   millions of years, how was life affected?
   _____

   _____

10. Describe the long-term carbon cycle. Show a sketch and explain it in words. (Use a full sheet of paper.)

11. Approximately how many degrees colder is the global average temperature during an ice age that during an interglacial period?
    a. 18°C   b. 3°C   c.   5°C
    d.   8°C   e. 12°C   f.   20°C

12. Briefly describe three ways that the climate has affected human evolution:

A. _____

    _____

B. _____

_____

C. _____

_____

13. In the following list, circle the changes that have been caused by people.
    a. more oxygen in the air   d. extinction of the dinosaurs
    b. more carbon dioxide in the air   e. warmer climate
    c. ice ages   f. none of the above are true

14. Name at least three activities of modern humans that have the potential to change Earth's climate.

A. _____

    _____

B. _____

_____

C. _____

_____

15. Life on Earth has survived at least 3.5 billion years or longer because:
    a. Life can survive any any conditions
    b. There are many forms of life
    c. Earth's temperature has not changed too much
    d. The ozone layer protects all living things
    e. Energy from the sun has always been perfectly constant