Name_____ Per._____   Date_____

DEEP TIME: Quiz (Pre)

This is a test! You are part of an experiment… to see how useful our lesson is going to be. Please answer each question based on your honest opinion and knowledge. You will not be graded on this.

_____ 1. How old do YOU think the Earth is? A) several thousand years old; B) several million years old;
       C)!several billion years old; D) I don't know.

_____ 2. Carbon-14 dating is generally used on A) fossils; B) sedimentary rocks; C) old bones or wood;
       D)!igneous (volcanic) rocks; E) any of these.

_____ 3. Carbon-14 dating gives us ages of A) several thousand years old; B) several million years old;
       C)!several billion years old; D) any of these; E) none of these.

_____ 4. The age of the Earth can be determined using principles of A) geology; B atomic physics;
       C)!astronomy; D) chemistry of crystals; E) all of these.

_____ 5. Half-life is A) how fast a radioisotope decays; B) the age of a radioisotope; C) the amount of a
       radioisotope; D) the amount of radioactivity in a radioisotope.

_____ 6. In order to measure the absolute age of a rock, we need to know   A) the original amounts of the parent
       and daughter isotopes; B) the present amounts of the parent and daughter isotopes; C)!both A and B

_____ 7. Potentially, what could a radioisotopic analysis of rocks tell us?
       A. It could provide strong confirmation of a very **young** Earth (several thousand years old).
       B. It could provide strong confirmation of a very **old** Earth (several billions of years old)
       C. It could provide strong confirmation of a **moderately** old Earth (several millions of years old)
       D. None of the above.
       E. Any of the above

_____ 8. If there are NO original radioisotopes in our earth with half-lives of less than 80 million years, and
       ALL OTHER known radioisotopes with LONGER half-lives ARE found what does this tell us?
       A. The earth is very old, and the faster-decaying isotopes have all decayed away.
       B. The earth is not infinitely old, otherwise ALL radioisotopes would be gone.
       C. This is a consistent pattern, not haphazard, giving us confidence in its accuracy.
       D. All of these.
       E. None of these.

_____ 9. How do scientists check their measurements of the ages of rocks?
       A. They use different sets of isotopes;
       B. They use techniques which are internally self-checking;
       C. They repeat the measurements done by other scientists;
       D. All of these.

_____ 10. Today, using a variety of isotopes and techniques, what do **scientists** conclude?
       A. The earth is only several thousand years old.
       B. The earth is several million years old.
       C. The earth is several billion years old.
       D. Problems and uncertainties make it impossible to be confident of any of these statements.

Name_____ Per._____   Date_____
DEEP TIME: Post Quiz
This is a test! You are part of an experiment… to see how effective our lesson was. Please answer each
question based on your honest opinion and knowledge.

_____ 1. How old do YOU think the Earth is? A) several thousand years old; B) several million years old;
       C)!several billion years old; D) I don't know.

_____ 2. Carbon-14 dating is generally used on A) fossils; B) sedimentary rocks; C) old bones or wood;
       D)!igneous (volcanic) rocks; E) any of these.

_____ 3. Carbon-14 dating gives us ages of A) several thousand years old; B) several million years old;
       C)!several billion years old; D) any of these; E) none of these.

_____ 4. The age of the Earth can be determined using principles of A) geology; B atomic physics;
       C)!astronomy; D) chemistry of crystals; E) all of these.

_____ 5. Half-life is A) how fast a radioisotope decays; B) the age of a radioisotope; C) the amount of a
       radioisotope; D) the amount of radioactivity in a radioisotope.

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       and daughter isotopes; B) the present amounts of the parent and daughter isotopes; C)!both A and B

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       B. It could provide strong confirmation of a very **old** Earth (several billions of years old)
       C. It could provide strong confirmation of a **moderately** old Earth (several millions of years old)
       D. None of the above.
       E. Any of the above

_____ 8. If there are NO original radioisotopes in our earth with half-lives of less than 80 million years, and
       ALL OTHER known radioisotopes with LONGER half-lives ARE found what does this tell us?
       A. The earth is very old, and the faster-decaying isotopes have all decayed away.
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       D. All of these.
       E. None of these.

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       A. They use different sets of isotopes;
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       C. The earth is several billion years old.
       D. Problems and uncertainties make it impossible to be confident of any of these statements.

Name_____ Per._____   Date_____

DEEP TIME: Quiz: SAMPLE RESPONSES (Pre and Post)

This is a test! You are part of an experiment… to see how useful our lesson is going to be. Please answer each question based on your honest opinion and knowledge. You will not be graded on this.

__**C**__ 1. How old do YOU think the Earth is? A) several thousand years old; B) several million years old; C)!several billion years old; D) I don't know.

__**C**__ 2. Carbon-14 dating is generally used on A) fossils; B) sedimentary rocks; C) old bones or wood; D)!igneous (volcanic) rocks; E) any of these.

__**A**__ 3. Carbon-14 dating gives us ages of A) several thousand years old; B) several million years old; C)!several billion years old; D) any of these; E) none of these.

__**E**__ 4. The age of the Earth can be determined using principles of A) geology; B atomic physics; C)!astronomy; D) chemistry of crystals; E) all of these.

__**A**__ 5. Half-life is A) how fast a radioisotope decays; B) the age of a radioisotope; C) the amount of a radioisotope; D) the amount of radioactivity in a radioisotope.

__**B**__ 6. In order to measure the absolute age of a rock, we need to know   A) the original amounts of the parent and daughter isotopes; B) the present amounts of the parent and daughter isotopes; C)!both A and B

__**E**__ 7. Potentially, what could a radioisotopic analysis of rocks tell us?
   A. It could provide strong confirmation of a very **young** Earth (several thousand years old).
   B. It could provide strong confirmation of a very **old** Earth (several billions of years old)
   C. It could provide strong confirmation of a **moderately** old Earth (several millions of years old)
   D. None of the above.
   E. Any of the above

__**D**__ 8. If there are NO original radioisotopes in our earth with half-lives of less than 80 million years, and ALL OTHER known radioisotopes with LONGER half-lives ARE found what does this tell us?
   A. The earth is very old, and the faster-decaying isotopes have all decayed away.
   B. The earth is not infinitely old, otherwise ALL radioisotopes would be gone.
   C. This is a consistent pattern, not haphazard, giving us confidence in its accuracy.
   D. All of these.
   E. None of these.

__**D**__ 9. How do scientists check their measurements of the ages of rocks?
   A. They use different sets of isotopes;
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