

Name: _____ Date: _____

Answer Key: Jurassic World vs. Reality: 9th Grade Fossil Record Mystery

Distinguish between cinematic fiction and geological facts by identifying preservation methods and interpreting the Law of Superposition in the Earth's crust.

1. Which principle suggests that in an undisturbed sequence of sedimentary rocks, the oldest layers are located at the bottom?

Answer: B) The Law of Superposition

The Law of Superposition is a foundational principle in stratigraphy stating that older layers are deposited first and covered by younger layers.

2. The process where the pore spaces of a bone or shell are occupied by minerals from groundwater is known as _____.

Answer: A) Permineralization

Permineralization occurs when mineral-rich water deposits silica or calcite into the open spaces of organic tissues, turning them into stone.

3. Index fossils are organisms that lived for a very long geological time across a very limited geographic area.

Answer: B) False

Effective index fossils must have lived for a short, specific period of time but were geographically widespread to help correlate rock layers.

4. Which of these is considered a 'trace fossil' rather than a body fossil?

Answer: C) A coprolite (fossilized dung)

Trace fossils record the activity or behavior of an organism, such as footprints or coprolites, rather than the physical remains of the body itself.

5. Why is the fossil record considered 'incomplete' by geologists?

Answer: D) All of the above

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Fossilization is a rare event requiring specific conditions; combined with geological erosion/subduction, much of Earth's biological history is lost.

6. A(n) _____ is a thin film of carbon residue left behind in a rock, often revealing the delicate structure of leaves or fish.

Answer: C) Carbon film

Carbonization (carbon film) occurs when heat and pressure compress an organism, leaving only a thin dark layer of carbon.

7. Absolute dating provides a specific age in years, whereas relative dating only determines the sequence of events.

Answer: A) True

Relative dating tells us if one layer is older than another, while absolute dating (like radiometric dating) gives a numerical age.

8. If a geologist finds a fossil of a marine brachiopod in a rock layer on top of a mountain, what does this most likely indicate?

Answer: B) The area was once covered by an ocean

Fossils provide evidence of past environments; marine fossils in high altitudes indicate that the land was once submerged and later uplifted.

9. When an organism decays completely inside a rock, it leaves a hollow space called a mold; if minerals later fill that space, it creates a _____.

Answer: B) Cast

A cast is a 3D replica of an organism formed when a mold is filled with sediment or minerals.

10. The Cenozoic Era is often referred to as the 'Age of Reptiles' because of the dominance of dinosaurs.

Answer: B) False

The Mesozoic Era is known as the Age of Reptiles; the Cenozoic Era is known as the Age of Mammals.