Relative Dating Worksheet Answer Key PDF

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Part 1: Building a Foundation

Which principle states that in undisturbed rock layers, the oldest layers are at the bottom?

undefined. Principles of Inclusions
undefined. Law of Superposition ✓
undefined. Principles of Faunal Succession
undefined. Principles of Original Horizontality

The Law of Superposition states that in undisturbed rock layers, the oldest layers are at the bottom.

Which of the following are types of unconformities? (Select all that apply)

undefined. Angular Unconformity ✓
undefined. Disconformity ✓
undefined. Nonconformity ✓
undefined. Cross-Cutting Unconformity

Types of unconformities include Angular Unconformity, Disconformity, and Nonconformity.

Explain the Principle of Cross-Cutting Relationships in your own words.

The Principle of Cross-Cutting Relationships states that a geological feature that cuts through another is younger than the feature it cuts.

List two geological features that can cut across rock layers.

1. First geological feature
Fault

2. Second geological feature

Igneous intrusion

Geological features that can cut across rock layers include faults and igneous intrusions.

Part 2: comprehension and Application

Which principle would you use to determine the relative age of a fault compared to the rock layers it cuts through?

undefined. Law of Superposition
undefined. Principles of Original Horizontality
undefined. Principles of Cross-Cutting Relationships ✓
undefined. Principles of Inclusions

The Principle of Cross-Cutting Relationships would be used to determine the relative age of a fault.

Which statements are true about index fossils? (Select all that apply)

undefined. They are used to date rock layers. ✓
undefined. They are found in only one location.
undefined. They represent organisms that lived for a short period. ✓
undefined. They are not useful for correlation.

Index fossils are used to date rock layers and represent organisms that lived for a short period.

Given a stratigraphic column with multiple rock layers, describe how you would apply the Law of Superposition to determine the relative ages of the layers.

The Law of Superposition states that the oldest layers are at the bottom, so you would analyze the column from bottom to top.

How can the Principle of Original Horizontality be applied to identify geological events? (Select all that apply)

undefined. Identifying tilted layers as having been disturbed. ✓
undefined. Assuming all layers are originally vertical.
undefined. Recognizing folding or faultting events. ✓
undefined. Determining the sequence of deposition. ✓

The Principle of Original Horizontality can be applied to identify disturbances such as tilting and folding.

Part 3: Analysis, Evaluation, and Creation

Which scenario best illustrates an angular unconformity?

undefined. Horizontal layers of sedimentary rock overlying tilted layers. ✓
undefined. Igneous intrusion cutting through sedimentary layers.
undefined. Fossils found in different layers of the same age.
undefined. Erosion removing the top layer of rock.

An angular unconformity is illustrated by horizontal layers of sedimentary rock overlying tilted layers.

When analyzing a geological cross-section, which observations would indicate a nonconformity? (Select all that apply)

undefined. Sedimentary rocks overlying igneous rocks. ✓
undefined. Parallel sedimentary layers with a gap.
undefined. Tilt sedimentary layers beneath horizontal layers.
undefined. Erosion surface between two different rock types. ✓

Observations indicating a nonconformity include sedimentary rocks overlying igneous rocks and an erosion surface between different rock types.

Analyze the relationship between faults and rock layers to determine the sequence of geological events in a given area.

Analyzing faults involves determining whether they are older or younger than the rock layers they intersect.

Which method would be most effective for correlating rock layers across large distances?

undefined. Using the Law of Superposition
undefined. Identifying index fossils ✓
undefined. Measuring the thickness of layers
undefined. Observating the color of rocks

Identifying index fossils is the most effective method for correlating rock layers across large distances.

Evaluate the following statements and select those that correctly describe the use of fossils in relative dating. (Select all that apply)

undefined. Fossils can provide absolute ages for rock layers.

undefined. Index fossils help correlate rock layers of the same age. ✓

undefined. Fossils indicate the environment of deposition. ✓

undefined. All fossils are equally useful for dating.

Index fossils help correlate rock layers of the same age and indicate the environment of deposition.

Create a hypothetical scenario involving a sequence of rock layers, intrusions, and faults. Describe how you would use relative dating principles to reconstruct the geological history of the area.

You would analyze the sequence of rock layers, identify intrusions and faults, and apply relative dating principles to determine the order of events.